

A Database Publication

# electron

Vol. 6 No. 12 September 1989 £1.25

## user



**Be a micro mechanic!**

Clever type-in program lets you  
create your own expert system

### REVIEWS

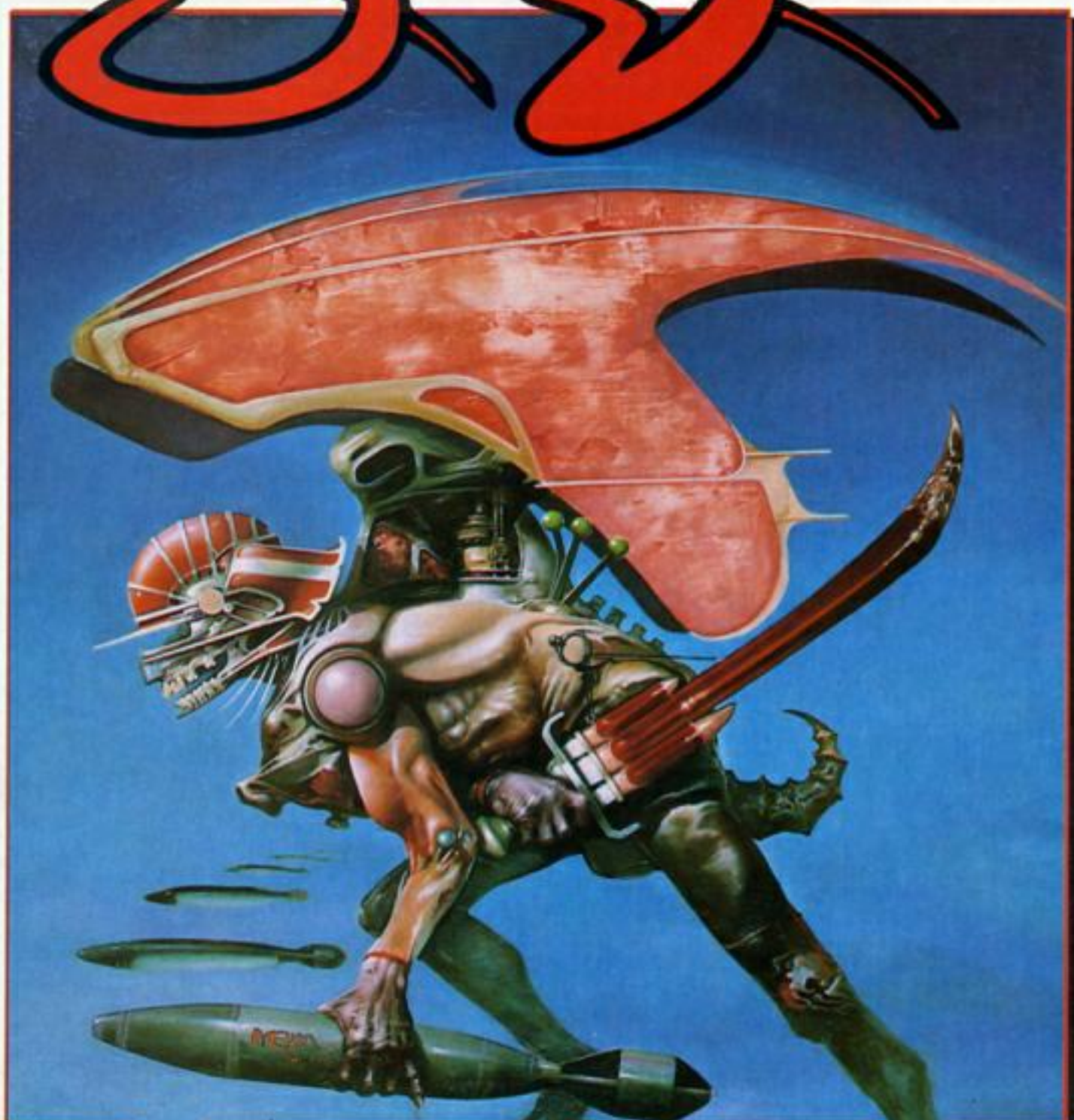
Basic Editor Plus,  
Sam 10, Ballistix  
Avon and Murdac

### LISTINGS

Keep track of your magazines with Ceemags  
Update your files with Attribute Editor  
Learn to touch type with Snakes



# BALLISTIX



## BALLISTIX - It's a whole new ball game!

Sick of silly old soccer? Tired of pathetic pinball? Then you need a dose of BALLISTIX - the fastest, wackiest, toughest computer ball game yet to appear - and a No. 1 smash hit on the Atari ST and Commodore Amiga computers. BALLISTIX just explodes with excitement, puzzles and an amazing 60 different screens of frenetic action.

BALLISTIX is incredibly flexible too. You can play against the computer or another player, can define where the balls are fired and their direction and can rack up bonuses that will get you extra goals, all to the accompaniment of a crowd that applauds your every goal. It's tough, fast, challenging and incredibly competitive.

BBC Micro Cassette ..... £9.95    Acorn Electron Cassette ..... £9.95  
BBC Micro 5¼" Disc ..... £11.95    BBC Master Compact 3½" Disc ..... £14.95

**(Compatible with the BBC B, B+ and Master Series computers)**

Please make cheques payable to "Superior Software Ltd".  
(The screen pictures show the BBC Micro version of the game.)

### GAME FEATURES

The aim of the game is simple enough: score more goals than your opponent to win a match. However there are lots and lots of extra features to contend with as you advance from screen to screen, for example:

- RIDGES to get the balls over,
- SPLITTERS produce extra balls,
- BUMPERS bounce balls all over,
- MAGNETS divert balls from you,
- HOLES for balls to drop down,
- TUNNELS hide balls from view,
- RED ARROWS accelerate balls,
- OIL SUCKS stop balls dead.

**SUPERIOR  
SOFTWARE**  
Limited

**ACORNSOFT**

(Acornsoft is a registered trademark of Acorn Computers Ltd. Superior Software Ltd is a registered user.)  
Dept BL3, Regent House, Skinner Lane, Leeds LS7 1AX. Telephone: (0532) 459453

Available from

**WHSMITH**  
and all major dealers



24 HOUR TELEPHONE  
ANSWERING SERVICE FOR ORDERS

### OUR GUARANTEE

- All mail orders are despatched within 24 hours by first-class post.
- Postage and packing is free.
- Faulty cassettes and discs will be replaced immediately.  
(This does not affect your statutory rights)





# CONTENTS

## Cover Story

### 16 Micro Mechanic

Build your own expert system with this easy-to-use Basic programming shell.

### 5 News

All the latest developments in the world of the Electron. Plus the latest Gallup chart.

### 7 Software

Sam 10, Ballistix and Avon and Murdac are tested by our panel of expert reviewers.

### 11 Keyword

Our wordsmith finds that a new disc-based thesaurus has some good features, but also a few flaws.

### 13 Attribute Editor

Alter the access codes of your disc files with ease using this handy utility.

### 19 Basic Editor Plus

Roland Waddilove plugs in this powerful new rom from Pres and gives it a thorough workout.

### 21 Arcade Corner

More hints, tips, cheat modes and passwords are lined up in this month's column.

### 22 Pendragon

Adventure help for those travellers lost in long forgotten and far away lands.

### 24 Scroller

List your programs forwards, backwards and with wraparound using John Geraghty's utility.

### 27 Ceemags

Keep track of your magazines with this purpose designed database program.

### 31 Snakes

Teach yourself to touch type with this amusing educational game.

### 35 Micro Messages

A selection from the many lively letters that you have been sending us over the past few weeks.

### 38 10 Liners

More mini-programming marvels performing amazing feats provided by our talented readers.

### 43 Roots

Francis Botto traces the chequered history of the six-year-old Acom Electron.

Published by  
Database  
Publications Ltd  
Europa House,  
Adlington Park, Adlington,  
Macclesfield SK10 4NP.

Editorial, Admin, Advertising:  
Tel: 0625 878888  
FAX: 0625 879966  
Telex: 9312188888 DB  
MicroLink: MAG001  
Prestel: 614568383

Subscriptions:  
051-357 2961

ABC

22,033 Jan-June 1988

Managing Editor  
Derek Meakin

Features Editor  
Roland Waddilove

Production Editor  
Peter Glover

Reviews coordinator  
Pam Turnbull

Promotions Editor  
Christopher Payne

Advertising Sales  
John Snowden  
Peter Babbage

News trade distribution:  
Diamond Europress Sales & Distribution, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

Printed by Carlisle Web Offset

Electron User is an independent publication. Acom Computers Ltd. are not responsible for any of the articles in this issue or for any of the opinions expressed.

Electron User welcomes program listings and articles for publication. Material should be typed or computer-printed, and preferably double-spaced. Program listings should be accompanied by cassette, tape or disc. Please enclose a stamped, self-addressed envelope, otherwise the return of material cannot be guaranteed. Contributions accepted for publication will be on an all-rights basis.

ISSN 0952-3057

© 1989 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles or listings.

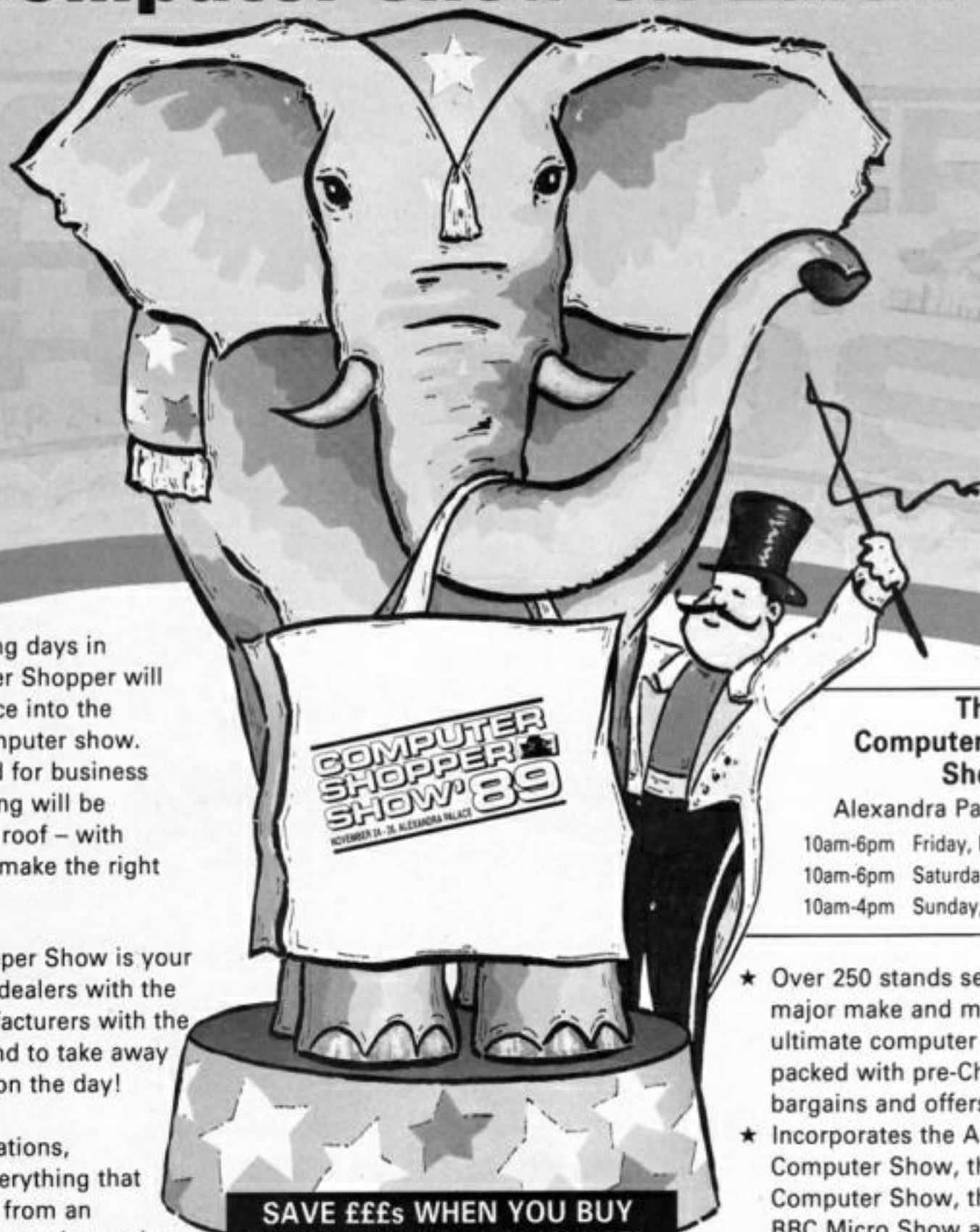
Database Publications is a  
division of Europress Ltd.

## Back to school

10 educational games for  
the Electron for just  
**£5.95**

Order on Page 45

# Visit The Greatest Christmas Computer show on Earth!



Yes, for three exciting days in November, Computer Shopper will turn Alexandra Palace into the world's greatest computer show. Everything you need for business and leisure computing will be available under one roof – with experts to help you make the right choice!

The Computer Shopper Show is your chance to meet the dealers with the bargains, the manufacturers with the latest machines – and to take away the things you buy on the day!

Auctions, demonstrations, competitions . . . everything that you've ever wanted from an exhibition will be happening at the Computer Shopper Show – the only show for the direct buyer and the ultimate computer shopping experience!

And, with Computer Shopper you know you'll save money!

Why not start right here! By ordering your tickets in advance you will save £££s! Simply complete and return the coupon with your payment or telephone the Credit Card Hotline on 051-357 2961 to place your order.

## The Computer Shopper Show

Alexandra Palace, London

10am-6pm Friday, November 24

10am-6pm Saturday, November 25

10am-4pm Sunday, November 26

### SAVE £££s WHEN YOU BUY YOUR TICKETS IN ADVANCE!

Yes! Please send me my tickets for the Computer Shopper Show!

- ☐ Adult tickets at £3 (Save £1!) \_\_\_\_\_  
☐ Under 16s tickets at £2 (Save £1!) \_\_\_\_\_  
☐ Family tickets - admits up to 2 adults and 2 children - £9 (Save £5!) \_\_\_\_\_

TOTAL \_\_\_\_\_

I would like to pay by -

- ☐ Cheque made payable to Database Exhibitions Ltd  
☐ Credit card ☐ Access ☐ Visa Expiry Date \_\_\_\_\_

No. \_\_\_\_\_

Signed \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_

Please return your completed order form to -  
 The Computer Shopper Show Ticket Office, Database Exhibitions Ltd,  
 PO Box 2, Ellesmere Port, South Wirral L65 3EA.

A760

- ★ Over 250 stands serving every major make and model – the ultimate computer hypermarket, packed with pre-Christmas bargains and offers.
- ★ Incorporates the Amstrad Computer Show, the Atari Computer Show, the Electron & BBC Micro Show and much, much more!
- ★ On-site car parking for hundreds of cars – ideal for taking away your computer bargains on the day!
- ★ Excellent public transport network with courtesy coach link to the local British Rail station.
- ★ Special show features and entertainment to make your shopping experience fun!
- ★ Special discount tickets for under 16s and family groups.

Sponsored by **COMPUTER SHOPPER**

Organised by **DATABASE EXHIBITIONS**

#### Prestel or Microlink

To place your order by Prestel, Key +89, then 614568383. Microlink users should key MAG 001. Please quote your credit card number and your full name and address when you place your order.

**TELEPHONE HOTLINE**  
 Place your orders for tickets by calling  
**051-357 2961**



## Pres scoop brings 50 disc games to Electron

**A DEAL which promises to revolutionise games playing for Electron users has been pulled off by Surrey-based Pres.**

After several months of negotiations with brothers Richard and Steve Hanson, John Huddleston of Pres (0276 72046) has secured the rights to convert more than 50 Superior Software games to Electron disc. Games discs for the Acorn machine have always been very few and far between, but as the Pres plans unfold they should form the most important boost

for the Electron in recent years.

Some of the titles will be released singly, but many will be put into four-game compilations in line with the Play it Again Sam concept already successful for Superior.

"We already have people working on converting the first of the titles to Electron disc and hope to be able to announce initial releases as soon as possible", said John Huddleston. "We will start with the games which can be converted easily then move onto the more difficult

ones. It is our intention to eventually convert all the titles".

He acknowledges that some like Elite may cause memory problems, but is confident that snags can be overcome by grouping games together with an E00 filing system.

Since the conversion work is in its infancy, not even approximate times have been released for the first disc versions.

"We have never gone in for expensive products. The games discs will be reasonably priced", promised John.



## Superior tackles soccer

DUE out soon on the Electron is Superior Soccer, a game which demands more than just player skill. "You can be a player or a manager or a player manager," said Richard Hanson of developers Superior Software (0532 459453). The Electron cassette version of Superior Soccer will cost £9.95.

## New Email services for MicroLink

FOLLOWING last month's decision to switch the MicroLink electronic mail service from Telecom Gold to Istel, it has been revealed that the 10,000 subscribers will soon have access to the widest range of electronic mail services in Britain.

New plans include easy access to more than 1,000 global databases, international teleconferencing and teleshopping. They also offer Istel's higher speed 2400 baud rate with MNP error correction and the support of X-Modem, Y-Modem and Kermit.

Subscribers will continue to be able to communicate with Telecom Gold and other international Dialcom systems and MicroLink chairman Derek Meakin has promised that the service will continue to undercut Telecom Gold prices.



## Winners collect

LONDON Zoo, complete with panda, recently hosted the awards presentation of the national Datachase schools competition, a joint venture between the World wide Fund for Nature and computer printer manufacturer Citizen Europe.

Winners of the 5 to 8 age group were the pupils of Cuckfield School. First in the 9 to 14 class was Hemphill Hall Primary, of Nottingham, and winners in the 15 to 19 age group were Loreto College, County Derry.

Each of the winners received

computer equipment vouchers worth £2,000 plus a Citizen 180E printer.

Pictured with pupils from the winning schools are judges Biddy Baxter, former Blue Peter editor, Dominic Powlesland of English Heritage and Rosemary Gacki, of Citizen Europe. Another of the judges was John Craven of Newsround fame.

## 4D dives in, too

THIS month sees kick-off for the first action football game on the Electron. Arcade Soccer from The Fourth Dimension gives you sliding tackles, diving goalies, corners and throw-ins.

Other features include goal kicks, eight directional scrolling, one to 16 player options and full keyboard or joystick controls.

"It's a game that I have wanted for some time", said Dimension's Steve Botterill. "We have put everything into it that we wanted in a soccer game ourselves".

Arcade Soccer has an overhead view for ease of play with the option to take on 16 computer teams of varying ability. Electron cassette costs £9.95.



Arcade Soccer gives an overhead view

**ELECTRON users can now test their brain power with Hi Q Quiz, a £2.99 offering from Blue Ribbon (0302 321134). Based on a board game, Hi Q Quiz has four categories of questions, science, sport, history and geography plus art.**



# Gallup Software Chart



THIS MONTH	LAST MONTH	TITLE (Software House)	COMMENTS	PRICE
1	●	<b>PLAY IT AGAIN SAM 10</b> <i>Superior</i>	The latest but not the last of the Sam compilations. This one re-runs Zalaga, 3D Dotty, Repton thru Time and debuts Qwak.	9.95
2	●	<b>SPOOKSVILLE</b> <i>Blue Ribbon</i>	Ghost hunting time again. An arcade adventure, simple and a little dated now. Good value though as you search for the spell book.	2.99
3	△ 14	<b>ZALAGA</b> <i>Aardvark</i>	The original release which is now also available on Sam 10. If you haven't got this Orlando classic, buy it, (it's cheaper as part of Sam 10).	9.99
4	●	<b>GALAFORCE</b> <i>Blue Ribbon</i>	One more from the Superior/Blue Ribbon deal to bring you the classics of yesteryear at a budget price. Well worth the money.	2.99
5	●	<b>PREDATOR</b> <i>Superior</i>	A new full-priced game. This is your opportunity to take on the Schwarzenegger role rescue to the diplomats and destroy the alien.	9.99
6	●	<b>COMBAT LYNX</b> <i>Alternative</i>	Back in the charts again is this wartime helicopter simulation. A nice introduction to the world of chopper pilots.	1.99
7	▽ 1	<b>FRAK!</b> <i>Aardvark</i>	A good five years old now, this is another Orlando classic and one of the first for the Electron. A collector's piece.	7.95
8	▽ 5	<b>JOE BLADE 2</b> <i>Players</i>	The graphics are good and the game very playable. The puzzle screens are wicked and will keep you busy for hours.	1.99
9	●	<b>YIE AR KUNG FU</b> <i>Hit Squad</i>	There have been many clones of this and any combat game is invariably compared to it. A nice trip into meaningless violence.	2.99
10	▽ 2	<b>LAST OF THE FREE</b> <i>Audiogenic</i>	Still selling well even at full price, this one has not been in the charts for some years but has had a new lease of life recently.	7.95
11	▽ 10	<b>GRAHAM GOOCH TEST CRICKET</b> <i>Alternative</i>	Originally released by ASL, it is more suited to the budget label. Recommended if you are totally disheartened with England's Ashes performance.	1.99
12	●	<b>CODENAME: DROID</b> <i>Blue Ribbon</i>	Now at a budget price this is a must if you have got Stryker's Run and are willing to take on the vengeful hordes.	2.99
13	●	<b>RAVENSKULL</b> <i>Blue Ribbon</i>	A classic and a bargain even at full price. An excellent arcade adventure which will keep you busy for days.	2.99
14	●	<b>JOE BLADE</b> <i>Players</i>	Back to the charts this month is the original of the Joe Blade duo. Community-conscious Joe has a battle on his hands.	1.99
15	▽ 8	<b>COMMANDO</b> <i>Encore</i>	A Rambo style shoot-'em-up against the odds. Now on a budget label, but you can also buy this as part of Play it Again Sam 3.	2.99
16	●	<b>HI Q QUIZ</b> <i>Blue Ribbon</i>	A new budget-style Trivial Pursuits quiz. If you like general knowledge questions this is a nice chance to test your skill.	1.99
17	●	<b>HOWZAT</b> <i>Alternative</i>	Back to cricket and to the screens where it never rains. You can now be the team selector. A simple but fun implementation.	1.99
18	●	<b>COPS 'N ROBBERS</b> <i>Atlantis</i>	Escape imprisonment in this platform game by shooting the intrepid police. Of dubious taste though quite a good game.	1.99
19	●	<b>PLAY IT AGAIN SAM 6</b> <i>Superior</i>	This compilation gives you the chance to see Galaforce 2 and Hunchback for the first time, as well as reminiscing over Hopper and Video's Revenge.	9.99
20	▽ 3	<b>STORMCYCLE</b> <i>Atlantis</i>	Save Earth from imminent invasion and disaster by finding five diodes, killing the enemy and beating the clock.	1.99



# Having a ball



Product: Ballistix

Price: £9.95

Supplier: Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX.

Tel: 0532 459453

BALLISTIX, Superior Software's latest release, is a sort of cross between a pinball machine and shove ha'penny, making it unlike anything you've seen before. It's a one or two player game and is great fun either against the micro or a friend.

The game is played on a court and the screen shows about half of this from a bird's eye viewpoint, scrolling as necessary to reveal the rest. At either end of the court is a goal, yours is at the bottom of the screen in the one player game. You can take your pick in the two player version.

The puck – a large red ball – is released in the centre of the court. You control an arrow which automatically follows the puck a short distance away and always points toward it. You fire small balls at the puck in an attempt to knock it into the opposing goal.

While you're about this tricky business your opponent or the computer is attempting to reverse the process.

The computer opponent simply takes the form of gravity – it's like playing uphill. It might not sound difficult, but in practice it certainly is.

You score points for goals, but the number you receive depends on how good the goal is. Run the puck over the line and you won't score many, but a long shot from half way down the court earns a lot.

To add interest and create a lot of frustration various objects litter the court and special tiles can be shot for extra features and bonuses.

Arrows accelerate the puck in the direc-

tion they point, which more often than not isn't the direction you want to go. Also the puck can disappear down black holes and reappear in the centre of the court. Tunnels suck in the puck and blast it out of the other end. Ridges present barriers and magnets attract it. Oil slicks and dead spots stop the ball.

Bonus tiles can be shot and RICOCHET letters can be collected for a further bonus. Splitters shatter the ball into four or eight bits, other tiles stop or send the puck off in a random direction.

You start off on a court with very few extra features, and on scoring three goals you move on to the next and harder level. More features are progressively added to increase the difficulty. With 30 levels to master, Ballistix is very challenging.

One feature I particularly like is that on completing a level you are given a password so you can skip any levels you've mastered next time you play.

The Mode 5 graphics are excellent, and minor colour changes add a little variety. The sprites are well defined and clearly visible over the background court graphics. The court scrolls quite quickly, though it jerks a little, but I didn't notice this while playing.

The sound effects are limited, just the odd beep here and there when the puck is hit or bounces off an object. A tune or two would have brightened up the game.



Ballistix is original, fun and very addictive. Each new level is a challenge which brings a new court layout with several surprises. I found it just as much fun as a one player game as with a friend. If you're on the lookout for something completely different Ballistix could be right up your street. Recommended.

Roland Waddilove

Sound .....	5
Graphics .....	10
Playability .....	10
Value for money .....	9
Overall .....	9

## Second Opinion

*I found Ballistix interesting initially, but after a while it became tedious. The two player version has more challenge, so if you can't find an opponent to play it with I'd forget it.*

Llewelyn





SAM finally reaches double figures with a compilation consisting of Zalaga from Aardvark, 3D Dotty by Blue Ribbon, the ubiquitous Repton with his time travels and a new arcade game called Qwak.

**Zalaga**, a typical classic shoot-'em-up, is an early work from the keyboard of the acclaimed Orlando and is best described as an update of the old Galaxians arcade game. You start each level with a blank screen on to which streams of aliens pour at an incredible speed. By positioning your laser base correctly you can dispose of quite a few of them.

Once on screen they form a traditional space invader pattern, moving back and forth then diving down towards you in groups dropping bombs. Between every second screen there's a challenge where aliens stream on without dropping bombs – you must shoot as many of them as possible. You get a bonus depending on your success rate.

While Zalaga is fast, colourful and furious the good-sized sprites tend to flicker, and although I've made it to level three, you'll need to be a really dedicated keyboard basher to want to play it a lot.

Next up is **3D Dotty**. I'd never seen it before and was quite pleasantly surprised. You are presented with a three dimensional view of three floors of a sort-of multi-storey car park with the floor missing. Small white dots fill the narrow pathways and your little figure – a sort of pac-man with legs – has to

# Gaggle of games

Product: Play it Again Sam 10

Price: £9.95 (tape)

Supplier: Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX.

Tel: 0532 459453

go round and chomp them.

Three highly mobile fungi stream across the floor, and contact with them drains your energy. So you run across the floor surfaces avoiding the fungus – which chases you – trying to get every dot, some of which are hidden behind pillars. For your defence you have three blocks that will prevent the fungus following you.

The game is fairly simple, the graphics small but adequate, the sound uninspired and irritating but can be turned off. It makes a refreshing change after the stresses of Zalaga.

**Repton Thru Time** hardly deserves a mention – you get the game, the 40 screens and the editor. Apart from that it's just more Repton 3 fun, but we've seen it all before



too many times. Sound and graphics are what you've come to expect from this game.

I'm in two minds about the final offering, a new release called **Qwak**. By itself is not worth the price of the compilation so if you've got the other three games you're

Product: Avon and Murdac

Price: £17.50 (DFS format)

Supplier: Topologika, PO Box 39, Stilton, Peterborough PE7 3RL.

Tel: 0733 244629

**TOPOLOGIKA** is a software house that has steadily gained a first class reputation in the provision of adventure games and educational software. It's not surprising, really, when you remember that the stable of writers includes such luminaries as Jonathan (Kingdom of Hamil) Partington, Jon (Acheton) Thackray and Peter (Philosopher's Quest) Killworth.

Just issued is a double-game blockbuster from the combined talents of Jonathan Partington and Jon Thackray. The disc contains two quite different text-only adventures that delighted my purist heart: **Avon and Murdac**.

The package consists of the usual neat folder containing the disc, two leaflets introducing the background to each adventure, two sealed envelopes embellished with the admonition *Don't be tempted* – concealing clue sheets – and last, but not least hour upon hour of fun and frustration.

I'll begin with Avon, since that should be regarded as the A side of this particular release. As the title hints, it is a brilliant romp that pays tribute to that Swan of Avon, that Bard illustrious, Will Shakespeare no less.

As a tourist from the United States, here you are in Stratford absorbing the atmosphere when slowly but steadily the magic of history begins to take effect – as the introduction puts it. *There was nothing I*

*could get my bearings from. Modern Stratford was leaving me behind.*

And so you suddenly find yourself in the following location: *"You are standing on a flat plain. From here it seems that all the world's a stage, and all the men and women merely players. They have their exits and their entrances to the north, south east and west"*.

With these words you are pitched headlong into a world redolent of Shakespearean references and allusions, many extremely funny, and a number of puzzles that need deductive and observational power to solve them rather than literary know-how.

I strongly recommend a good wander

## The bard's tale

round the many locations that you can visit without needing to solve any puzzles first. I am delighted to say that Jonathan here follows the philosophy I heartily approve of – he doesn't pack the early stages of this adventure with puzzles that must be solved before you can advance any further. Other, lesser, writers or would-be-writers, please note and follow the example set by these experts.

The only tiny problem that has to be over-

come early on is that of finding some way of seeing in the dark – and those three charming ladies on the blasted heath have the answer to that. And, what's more, are quite willing to see eye to eye with you regarding your need.

Another acquisition which will be useful from very early on in the game is the equivalent to the packing-case used as a storage medium in *Dungeon Adventure* – and you should remember what use Sir John Falstaff made of it in *The Merry Wives of Windsor*, too.

The language at times is lyrical and at others acts as a vehicle for the zany humour that characterises this adventure. I really must give a few examples to whet your appetites:

*"A rather dull-looking constable appears, cries 'HAVOC, and lets slip the dogs of war.*

*In fact a small chihuahua appears and stands barking at you. 'Drug squad', says the constable. 'I must search you for certain substances'.*

*"You sit down at the feast. To your horror a ghastly vision appears and shakes its gory locks at you. It is the ghost of the Scotsman you have so foully slain! You stand and address this shadow, this unreal mockery, which only you can see. This displaces the mirth of the guests, who stand*





paying over the odds. Then again, it is very smoothly programmed and has a sense of humour.

You control Qwak, a little duck, in a simple levels game in which you collect all the keys on the screen and make your way through a door to the next. You can move left, right and jump plus send out a bubble to dispose of baddies. However, completing a screen peacefully – without bubbling a baddie – earns you a nice bonus.

You also get points for various other objects picked up and collecting seven flowers gives you an extra life. The graphics are detailed and the sprites' movement is quite

smooth. Unusually for an Electron game, it is in Mode 2 and the extra colours make it very colourful.

As with the other Sam compilations, its value for money depends on how many of the other re-releases you've got. If you're missing two or three of these games then Sam 10 is recommended.

Lazarus

Sound .....	7
Graphics .....	7
Playability .....	8
Value for money .....	9
Overall .....	8

## Second Opinion

*The only new game for me is Qwak, an entertaining and addictive, if old fashioned, levels game. I liked the gameplay and the colourful Mode 2 graphics. The other re-releases were all excellent titles in their day, but I'm now bored with Repton. Let's see something a little different on the next Sam compilation, Superior.*

Roland Waddilove

*not upon the order of their going, but go at once. The ghost avants and quits your sight, melting into the wall to your north-east.*

*You are at the centre of the wood. To the south is a cottage which probably belongs to a retired criminal, for it bears the name Dunsinnin.*

The parser is of the kind we have grown to accept as normal for a sophisticated adventure from a top flight author. It happily accepts multiple input such as GO NORTH, EAT THE PIE, OPEN DOOR, IN and can deal with exclusions such as TAKE EVERYTHING EXCEPT THE GOBLET.

It's very helpful when mapping to be given a long location description first time there and a shorter one on subsequent visits, but you can arrange to have the full description every time simply by entering the command VERBOSE.

At the heart of the adventure – apart from the treasures to be collected – are a number of fascinating puzzles which will have

many of you muttering away to yourselves as you try to solve them.

For me, the most fascinating was the casket problem: Lady Portia – from The Merchant of Venice – has three caskets, of lead, silver and gold.

The problem is working out in which order to open them so as to get the real prize as against the booby prize. You'll encounter this problem three times, since the action of the game takes place on three different dates – January 6, March 15 and June 24 – and a potion is your passport to time travel.

There are a whole host of less complex puzzles, some of which need applied common sense and some a little general knowledge. Thus, you can pacify a musical gaoler provided you know who is his favourite composer.

Similarly, you have to drink that old toper Sir John Falstaff under the table – which is

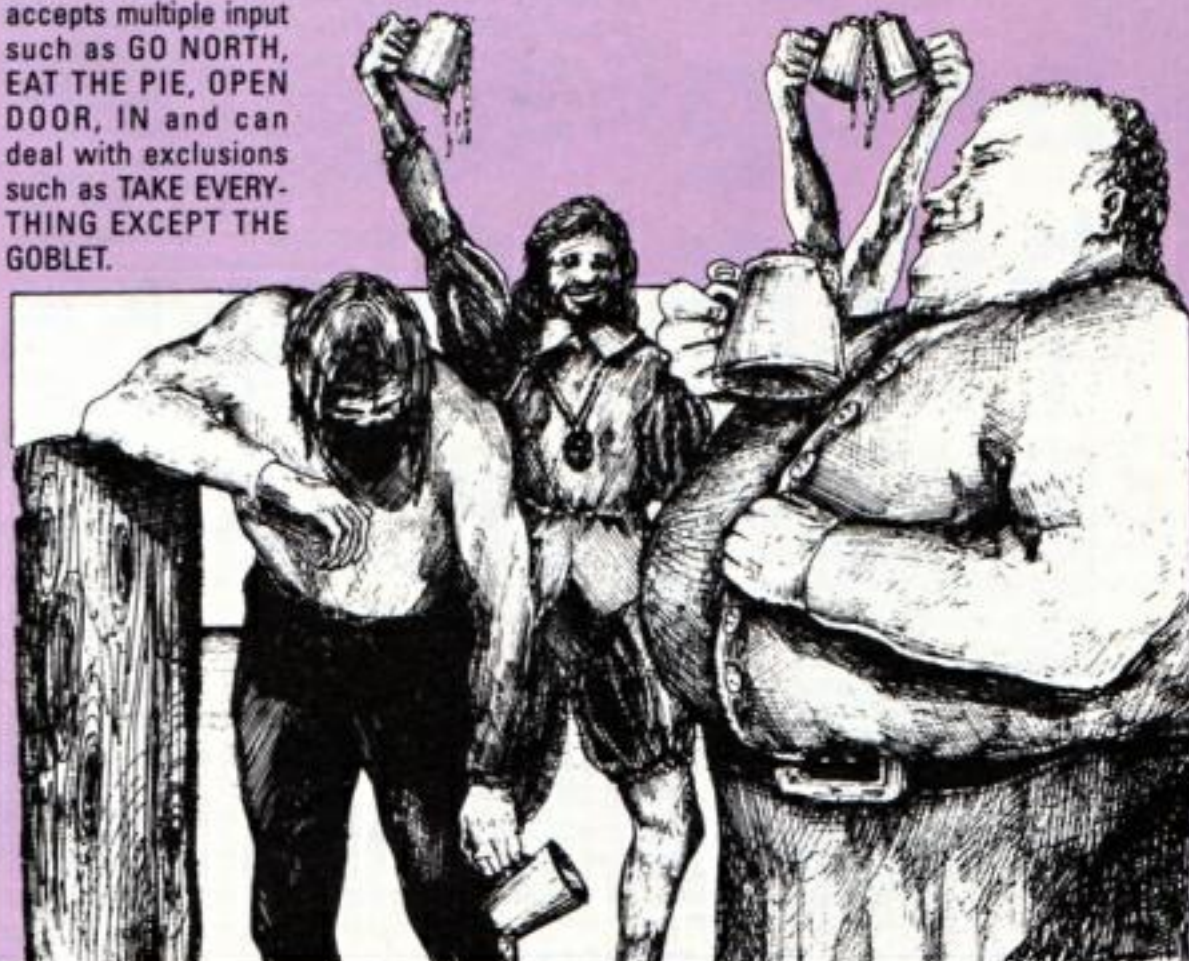
Turn to Page 10 ►

## Second Opinion

*I prefer adventures which concentrate more on puzzle solving and less on mapping a large number of locations and Avon and Murdac fit the bill.*

Roland Waddilove

Presentation .....	9
Atmosphere .....	10
Puzzlement .....	9
Value for money .....	10
Overall .....	9





Learning has never  
been such fun!

# fun school

# 2

## Fun School 2 for Over-8s contains:

- **Build a Bridge:** Shape-fitting challenge
- **Passage of Guardians:** Enjoy anagrams
- **Unicorn:** First steps in problem solving
- **Logic Doors:** Mapping made easy
- **Souvenirs:** An introduction to travel
- **Code Boxes:** Discover binary arithmetic
- **Mystery machine:** Have fun breaking codes
- **Escape:** A final check on progress



## Fun School 2 for 6 to 8 year olds contains:

- **Number train:** Calculations made enjoyable
- **Shopping:** Which shops for which products?
- **Maths Maze:** Fun improving arithmetical skills
- **Treasure Hunt:** Introduction to coordinates
- **Bounce:** Get to grips with angles
- **Packing:** Discover tessellating shapes
- **Caterpillar:** Word building challenge
- **Number jump:** Have fun practising tables

## Fun School 2 for Under-6s contains:

- **Shape Snap:** Colourful shape recognition
- **Find the Mole:** Experiment with number sizes
- **Teddy Count:** Ideal introduction to numbers
- **Write a Letter:** Creative fun at the keyboard
- **Colour Train:** Play at spotting colours
- **Pick a Letter:** Word building made easy
- **Spell a Word:** Enjoy naming the pictures
- **Teddy Bears Picnic:** Move around a maze

Now children can really have fun while learning. Fun School 2, designed by a team of education-  
alists, is available for three age groups: Under-  
6s, 6-8 year olds and Over-8s. Each pack comes  
with eight colourful and exciting programs, a  
colourful button badge and detailed instructions  
giving educational help.

The computer itself monitors the child's  
progress. The skill level – initially set by parents  
– is automatically adjusted to suit the child's  
ability.

Now children can enjoy using their parents'  
computer while they learn at their own pace.

Available for:  
Spectrum, Commodore 64,  
Amstrad CPC, BBC Micro/Electron  
£9.95 (tape) £12.95 (disc).

Also: Atari ST, Amiga, PC £19.95

**DATABASE  
EDUCATIONAL  
SOFTWARE**

Format	Under-6s		6-8 years		Over-8s	
	Tape	Disc	Tape	Disc	Tape	Disc
Spectrum	9094	9095	9096	9097	9098	9099
Commodore 64	9064	9065	9066	9067	9068	9069
Amstrad CPC	6179	6180	6181	6182	6183	6184
BBC Micro/Electron	2239		2242		2245	
BBC B+/Master 40T		2240		2243		2249
BBC B+/Master 80T		2241		2244		2250
Atari ST		9192		9193		9194
Amiga		9842		9843		9844
PC 5.25"		5764		5765		5766
PC 3.5"		5767		5768		5769

Please circle the code number of the format you require

Send to: Database Direct, FREEPOST,  
Ellesmere Port, South Wirral L65 3EB.  
Access/Visa orders: Tel: 051-357 2961

Please supply Fun School 2 for the code  
number(s) circled

☐ Cheque payable to Database Software

☐ Please debit my Access/Visa card no.

\_\_\_\_\_  
Expiry date \_\_\_\_/\_\_\_\_/\_\_\_\_

Signed \_\_\_\_\_

Add £2 per program Europe & Eire/E5 Overseas

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Postcode \_\_\_\_\_



## ◀ From Page 9

perfectly feasible provided you use your loaf.

It's possible to get thoroughly pie-eyed on the Ides of March, but at the same time it could turn out to be a lifesaver. I'd also recommend that you indulge in some asinine behaviour similar to that of King Nebuchadnezzar as recorded in the Book of Daniel.

A couple of final hints for this superb adventure: The command WAIT is invaluable at certain points in the game – and don't be afraid to draw your bow at a venture.

Avon is a game I can gladly recommend to expert and novice alike.

Moving on to **The Monsters of Murdac**, which is billed as a free inclusion, we come to an adventure of a very different type. Personally, I think **Murdac** should be sold in its own right.

I should say right away that this is not for beginners, being designed to bewitch those who rate themselves as competent or expert.

The initial scenario consists of 14 locations only, but since one is a locked house that contains a cellar you needn't worry. In fact there's around 70 locations in all.

However, while careful mapping is essential, the chief pleasure has to do with solving quite complex puzzles rather than exploring exotic locations.

The opening problem was, to my mind, very difficult, since it involved a minimum move sequence to locate a building site while something could still be done. However, if you are successful, I would refer you to Psalm 98 verse 7 as found in the Book of Common Prayer – and urge you to



remember how Joshua fought the battle of Jericho.

Also in the opening sequence, a sword needs to be obtained. Remember how King Arthur got Excalibur? Well, making the appropriate noises could well do you the same sort of favour.

Perhaps the chief puzzle in **Murdac** is working out how to free the wizard's daughter from her roll-guarded cell (shades of

Twin Kingdom Valley) without ruining your chances of solving other problems as well. You'll need to be a master of disguise, totally trustworthy and also adept at timing.

There's a lovely description of the place where you find the wizard:

*"You are at the top of the hill, which falls away steeply on three sides. In the distance you can see various curious scenes, including a disused shooting gallery, a garden from which giant rocks are taking off, a large cornfield, a giant spider's web and a distant bungalow by the seaside. The path leads back downwards from these awe-inspiring sights".*

If I tell you that the spider's web is a reference to Quondam, can you work out what the other adventures are?

One important objective in the game is working out where to keep your treasures – but don't deposit them before you are sure you won't need them again. They tell me that cold showers are good for you, but a hot one can be invaluable for getting a monkey off your back.

Finally, both adventures contain mazes – with a difference. One in **Avon** is redrawn every time you go there, and not a single one can be mapped by dropping things. How times have changed.

This two-game disc is an absolute must for any serious adventurer.

**Mad Hatter**

### Bruce Goatly tries out Keyword and finds it a unique product, but not without its flaws

**K**EYWORD from Swift Software is a disc-based utility that provides interactive help for word processing, crossword solving, Scrabble and so on – in fact, anything involving words. You could, of course, use a thesaurus – a book of words rather like a dictionary.

But whereas a dictionary is arranged alphabetically a thesaurus is organised by ideas or topics and it can take a long time to find the exact nuance you want. A computerised version however, would be much faster and that's where Keyword comes in. It offers more than 10,000 words and nearly 1,000 subject headings.

The dictionary is held on disc and is run by booting with Shift+Break. Using it is easy: I entered the word *speech* and after a brief disc whirr two words were shown – *speech* and *speechless*.

Selecting *speechless* with the cursor keys yielded the two categories *muteness* and *wonder*. I chose the former and was rewarded with 16 possibilities, of which *dumbfound* was close enough to the word I wanted – *dumbfounded*. Had I not been satisfied with anything in the list I could have selected one of the words and found further

# Putting in a good word...

categories from which to choose.

There is no doubt that this is a useful and powerful piece of software, but it has its drawbacks. It is more expensive than even the largest printed thesaurus and, unlike book editions, it fails to separate entries by parts of speech – successive entries under *muteness* were the noun *silence*, the adjective *silent* and the verb *soften*.

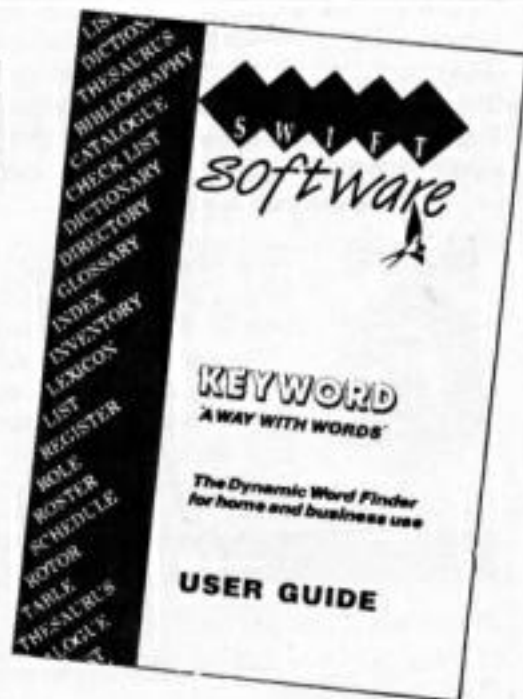
There are a few spelling errors – for instance *indefinate*, *defense*, *intelligability*. Although 10,000 words represents many times the average person's vocabulary, it is not enough for professional writers.

One major fault is that you can't call on it from within a word processor like View. You

must save your work, boot up Keyword, find the word, enter View and finally reload your text.

As a true thesaurus, Keyword is limited by its size. However, as a word finder for everyday use it is excellent. Next time I am stuck for a word I shall be using Keyword rather than reaching for the thesaurus on the bookshelf. Give me convenience every time.

Product: Keyword  
Price: £29.95 (mail order only)  
Supplier: Swift Software, 347 London Road,  
Hazel Grove, Stockport, Cheshire SK7 6AA.  
Tel: 061-477 8405





# Upgrading to 16 bit?

Whether you're about to buy an Atari ST, an Amiga or a PC, we've got just the magazine for you.

Atari ST User, Amiga Computing and PCA are THE three top magazines dedicated to 16 bit micros. Written in the easy-to-read Database style, each magazine is the ideal companion for the micro it covers.



**£2.95**

The biggest and fastest growing magazine for users of the Atari ST.

It's packed with all the information you need to make the most of your ST, interviews with top ST programmers to exclusive previews of the latest business and games software.



**£2.95**

Britain's newest and brightest magazine for Amiga Users.

In each issue are reviews of all the latest software, ranging from games, art packages and business programs, to video titling systems, music creators and languages. Learn about the Amiga's incredible sound and graphics capabilities, and how to write your own games, utilities and business software.



**£1.95**

The most up-to-date, fact-filled magazine devoted to the IBM PC, Amstrad PC and compatibles.

Each month it's packed with facts about the latest software, handy utilities, fast-action games, music programs and much, much more. There are thorough evaluations of all software and hardware, beginner's tutorials and language workshops, plus unbeatable special offers.



**Save**



UK only

As a reader of Electron User if you subscribe to any of these magazines using the form below, we'll give you a £5 reduction.

So send off your subscription today. Ensure you get your copies delivered straight to your door - before they appear in the newsagents - and save money too!

## ORDER FORM

Please send me the next 12 issues of

- ☐ Atari ST User £29.95 (9344) ☐ Amiga Computing £29.95 (9557)  
☐ PC £18.00 (5456)

Please tick your selection and payment method.

☐ Cheque payable to Database publications

☐ Access/Visa account number:

\_\_\_\_\_

Expiry date

\_\_\_\_/\_\_\_\_

Signed \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

Post Code \_\_\_\_\_

Daytime telephone number \_\_\_\_\_

Send to:  
 Database Direct, FREEPOST  
 Ellesmere Port, South Wirral L65 3EB.

Only for UK subscribers

EU9

# EVERYTHING YOU NEED TO KNOW ABOUT DESKTOP PUBLISHING

**ONLY  
£9.95**

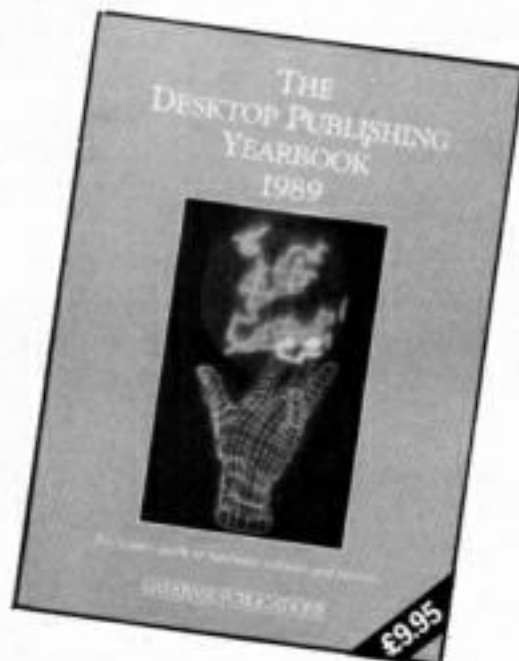
The Desktop Publishing Yearbook 1989 is an invaluable buyer's guide containing the most detailed survey available of hardware, software and services in the electronic publishing field.

And there are clearly-written "how-to" articles for both the newcomer to Desktop Publishing and the experienced user.

Articles cover single-user and multi-user publishing systems, publishing

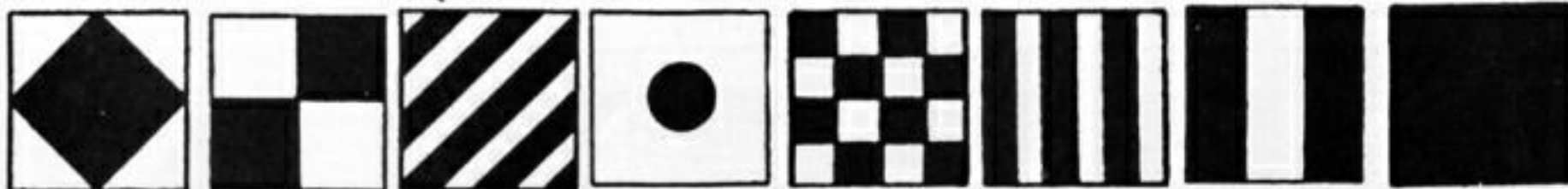
software, laser and other electronic printers, matrix printers, digitisers and scanners, computer typesetting, magazine and newspaper composition, documents and forms creation, bureau services, word processors, and many other key topics.

Whether you're a beginner or professional and would like to find out more about the exciting possibilities of DTP, then this book has all the information you need. Send for your copy today!



**TO ORDER YOUR COPY,  
PLEASE USE THE FORM ON  
PAGE 45**





# Flying the flag

**Jim Mure presents a handy disc utility to make changing access codes of files easier**

**A**TTIBUTE Editor is a short but very useful utility for ADFS disc owners who can use it for setting and re-setting the access codes associated with each file.

Along with each file saved on disc the ADFS stores a number of flags which define what you can do with a file. For instance, one of the most common flags, L, is used to indicate a locked file. Once this is set it is impossible to accidentally delete or overwrite the file – a useful safety net for valuable programs and data.

If you save a file like a program listing or View text and then catalogue the disc you'll see the letters WR following the name. The first letter, or access code to give it its proper name, means you can write to the file. In other words you can overwrite it by saving or opening a different file with the same name or delete it entirely from the disc. The R means you can also read the file – in other words open, or load it.

To change the flags or access codes you use ACCESS like:

\*ACCESS Program LR

This will set Program so that it can be read – loaded and run, but it can't be overwritten or deleted. It's a good idea to lock all

your valuable files in this way.

With up to 48 files in a directory and the number of directories limited only by disc space, it can be very time consuming and tedious altering all the access codes. And a further problem is that if you change a file to E – execute only – you can't change it back again like you can with the other flags.

Attribute Editor, a menu driven utility, is designed to make the process of altering these flags much simpler – and you can alter the E flag too. All you need to do is run the program, place a disc in the drive and hit

## Attribute Editor

Directory entry No :3

Name :ScrSave

Attributes :WR

Load address : 1F00      Exec address : 8023      Length : 01FD

A – Alter, N – Next, Q – Quit  
L – LR, W – WR, T – LWR, E – E

a key. Press Return for the \$ root directory or enter the directory name to go to. Each program will be listed along with its flags, length, load and execution addresses. Press N to see the next file or A to alter the current one's attributes.

On pressing A another prompt is displayed and here you select L for LR, W for WR, T for LWR, and E for E. The file will be changed and re-displayed. Press N for the next one or Q to quit. And that's all there is to it, now valuable files can be locked in a flash.

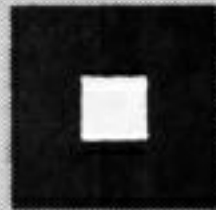
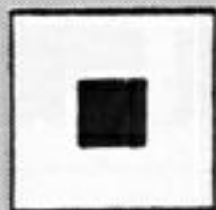
```

10 REM Attribute Editor
20 REM By Jim Mure
30 REM (c) Electron User
40 PROCstart
50 PROCdir
60 NUMX=0
70 FORFX=81205 TO 816FF STEP26
80 IF?FX=0 CLS:PRINTTAB(3,10)"
No more entries in this directory
!" :AS=GET$:RUN
90 NUMX=NUMX+1
100 CLS
110 PROCheader
120 VDU23,1;8202;0;0;0;
130 PRINT"Directory entry No :
";NUMX
140 PRINT"Name :";
150 PROCshow
160 PROCattr
170 PROCdetails
180 PRINTTAB(4)"A - Alter, N
- Next, Q - Quit"
190 AS=GET$
200 IF AS="A" PROCalter:GOTO 10
0
210 IF AS="Q" PROCend
220 NEXTm
230 END
240 DEFPROCalter
250 FOR UX=0 TO 4
260 IFUX=3 THEN 280
270 ?(FX+UX)=(?(FX+UX) AND 87F)
280 NEXT
290 PRINT" L - LR, W - WR, T
- LWR, E - E"
300 AS=GET$
310 IFAS<>"L" AND AS<>"W" AND A
S<>"T" AND AS<>"E" THEN GOTO 300
320 IFAS="W" THEN ?(FX)=(?(FX)+
128):?(FX+1)=(?(FX+1)+128)
330 IFAS="L" THEN ?(FX)=(?(FX)+
128):?(FX+2)=(?(FX+2)+128)
340 IFAS="T" THEN ?(FX)=(?(FX)+
128):?(FX+1)=(?(FX+1)+128):?(FX+2
)=(?(FX+2)+128)
350 IFAS="E" THEN ?(FX+4)=?(FX+
4)+128
360 *OPT4,3

```

Turn to Page 14 ►





#### • ◀ From Page 13

```

370 ENDPROC
380
390 DEFPROCdir
400 CLS
410 PROCheader
420 FOR FX=81205 TO 816FF STEP
26
430 IF !FX=0 FX=816FF
440 IF !FX=3>127 PRINT "dir na
me :";PROCshow
450 NEXT
460 PRINT
470 PRINT " - Hit Return for
$ directory -"
480 INPUT "Enter directory name
:";NS
490 IF NS="" THEN 510
500 OSCLI("DIR $. " + NS)
510 ENDPROC
520
530 DEFPROCshow
540 FOR AX=0 TO 4
550 IF !FX=AX=13 AX=4:GOTO600
560 IF !FX=AX>127 PRINT CHR$(?
(FX+AX) AND 87F); ELSE IF !FX=AX
>31 PRINT CHR$(?FX+AX); ELSE P

```

```

RINT ". ";
570 NEXT
580 FOR AX=5 TO 9
590 IF !FX=AX<13 AND !FX=AX
>31 AND !FX=AX<128 THEN PRINT C
HR$(?FX+AX); ELSE IF !FX=AX=13
THEN AX=10 ELSE PRINT " ";
600 NEXT
610 ENDPROC
620
630 DEFPROCstart
640 CLS
650 PROCheader
660 PRINT " - Insert disc and
press any key -"
670 BS=GETS
680 *MOUNT
690 ENDPROC
700
710 DEFPROCattr
720 PRINT TAB(20)"Attributes : "
;
730 IF !FX=4>127 PRINT "E":END
PROC
740 IF !FX=3>127 PRINT "D";
750 IF !FX=2>127 PRINT "L";
760 IF !FX=1>127 PRINT "W";
770 IF !FX>127 PRINT "R";

```

```

780 ENDPROC
790
800 DEFPROCheader
801 COLOUR 129:COLOUR 0
810 PRINTTAB(10,1)" Attribute E
ditor "
815 COLOUR 128:COLOUR 1
820 PRINTTAB(10,2)"-----
-----"
830 ENDPROC
840
850 DEFPROCend
860 *.
870 VDU23,1,1;0;0;0;0;
880 END
890
900 DEFPROCdetails
910 PRINT "Load address | Exec
address | Length"
920 FOR DX=11 TO 19 STEP 4
930 IF !FX=DX<17 PRINT;"0";"?
(FX+DX); ELSE PRINT;"?(FX+DX);
940 IF !FX=DX-1<17 PRINT;"0";
"?FX+DX-1); ELSE PRINT;"?(FX+DX-
1);
950 PRINT;" ";
960 NEXT
970 ENDPROC

```

TWO WAYS TO ENSURE  
YOU GET

# electron

user

EVERY MONTH

1. Complete and mail subscription form on Page 45
2. Hand this form to your newsagent.

Please reserve me a copy of Electron User magazine every month until further notice.

- ☐ I will collect  
☐ I would like it delivered to my home.

Name \_\_\_\_\_

Address \_\_\_\_\_

Note to newsagent: Electron User should be obtainable from your local wholesaler, or contact Circulation Manager on 0424 430422

## NEW RS 423 CARTRIDGE

- produced in response to recent customer requests
  - INCLUDES SOCKET FOR 16k PROM/32k RAM
  - price uncased £29.95 + £5 for case + £20 for 32k RAM
- PRESTEL SYSTEM OFFER - add £10 to include Mode 7 simulator package

### ROMPLUS-144

Sideways Rom Cartridge with Printer Buffer and Filing System  
Fits into Plus 1/Rombox Plus slot - holds 7 Roms plus 32k Ram  
Roms selectable from software on integral OS Rom  
Compatible with PMS-NTQ plus Font Roms  
Electron User thought it an "excellent add-on" (August, 1988)  
Romplus-144 costs just £39 + £20 for the 32k Ram

### THE MODE 7 SIMULATOR ROM

Gives FULL Mode 7 display facilities simulated in Mode 2  
Includes Prestel terminal software - just add modem and RS423 adaptor  
Compatible with screen poking software, e.g. Wordwise, Teletext  
HIMEM at &7C00 with Master Ram board  
Price £25 - includes disc based screen editor/carousel software on 3.5" ADFS or Tape (for DFS transfer) - editor requires MRB

### MODE 7 ADAPTOR KIT

Bare PCB, ROM, parts list and layout £25 + £15 for case

### ORIGINAL E2P SECOND PROCESSOR KIT

Bare PCB, Construction Notes - With software on tape...£15 or on 3.5" ADFS disc or Rom...£20

All prices inclusive of post, etc. Please allow 28 days delivery  
Kits do not include parts - you buy them separately from Watford, Maplins etc.

**JAFAS SYSTEMS** - Committed to the Electron  
9 Lon-y-Garwa, Caerphilly,  
Mid-Glamorgan CF8 1NL. Tel: 0222 887203







# SIMPLY SUPERIOR

A selection of four  
of the best games  
ever released by  
Superior Software

## Repton Infinity

Repton Infinity is the best game yet in the Repton series. It features four games, each with numerous mind-bending puzzles, and also comes with a complete game-designing system.

With it you get a Sprit and Map Editor plus an easy-to-use programming language that lets you create your own unique games. They compile to stand-alone games you can load up and run on their own.



RRP £12.95

Our Price  
£9.95

## Elite

This has to be THE classic arcade adventure of all time.

Can you work your way up from Harmless to Elite by flying from planet to planet, selecting goods at the best prices and trading them for a profit on other planets?

Will you survive the hectic space flights and docking procedures, all shown in superb 3D?

If you don't already own a copy of Elite, this is one game you simply MUST have in your collection!



RRP £12.95

Our Price  
£9.95

## Barbarian

Barbarian is a fierce game of combat which will tax your skill and reflexes to the limit.

When you start you can choose either a male or female character, then you have to hack and slay your way through dozens of punishing screens on your way to the Dungeon of Drax.

When you get there your mission is to kill the evil Drax himself – but be careful, you'll need all your wits about you to have any chance of success against your dastardly opponent.



RRP £9.95

Our Price  
£7.95

## The Last Ninja

The secrets of the Ninjitsu way had been jealously guarded for centuries, only once every decade were the scrolls seen at the ritual of the White Ninja. None coveted these secrets more than the evil Shogun. Seizing the opportunity of the ritual he sprang a fiendish trap that destroyed the brotherhood, except for one... You. The Last Ninja.

Your sworn oath is to recover the scrolls, you travel to the mystical lands of the Shogun. Already his guards are mastering the ways of the Ninjitsu. To reach the Shogun's Palace you must use all your weapon craft and fighting skills as you travel through dangerous wastelands and magnificent gardens, then descend into the direst dungeons before the final confrontation.



RRP £9.95

Our Price  
£7.95

**To order please use the form on page 45**



# EXPERT ELECTRON

## Awaken your micro's artificial intelligence with the help of Francis Botto's utility

**I**f ever there were a computer application shrouded in mystery, the expert system must surely be it. The fact that expert systems have become synonymous with artificial intelligence (AI) – or is it the other way round – might have something to do with it.

AI is possibly the most fuzzy term in the computer dictionary. It seems no one can agree about its actual meaning. Expert systems are an attempt to emulate the knowl-

edge, and more important, the reasoning of a human expert. In other words they're designed to share an expert's knowledge and experience with others.

The fact that human experts of all kinds share a universal process of reasoning when problem solving makes possible the idea of an expert shell, where the knowledge base can be programmed according to a particular user's needs. The knowledge base being a collection of specific rules, which are more often than not, painstakingly arduous to define.

Within an expert system the computations that use the knowledge base in an intelligent manner may be as identical in car maintenance as computer repair. These computations are collectively referred to as the inference engine. The nature can be such as to make the whole program portable, in

terms of applying it to a variety of subjects.

Expert shells as they're called, are quite popular now, so with this in mind, and not to leave the Electron in the lurch, the program here is a shell for you.

To demonstrate how simple expert systems are, the program below is a sophisticated system incorporating the up-to-date computational technique of backward chaining. Expert Shell will allow you to enter your own knowledge base.

This base can accommodate up to 299 IF ... THEN rules, which are continually shown when the program is running so you can see what you have or haven't entered. (Hold down Control+Shift to stop them scrolling).

Before you start developing your expert system, you'll have to pinpoint a particular application. I've started using the shell to store rules concerning computer breakdowns.

For instance, each time I hear of a computer failure and its subsequent cause or cure, I record the appropriate rules. Eventually I will have a computer repair expert which will have more knowledge, as well as a better memory, than myself.

The simplest type of rules that can be entered are those involving a single fact and conclusion. For instance, consider computer fault diagnosis. If you know that when the screen is fuzzy the monitor lead is incorrectly plugged in, in Basic you'd write:

```
IF screen is fuzzy THEN monitor  
lead incorrectly plugged in
```

If you select the Enter option using Expert

```
10 REM Expert Shell  
20 REM By Francis Botto  
30 REM (c) Electron User  
40 :  
50 MODE 6  
60 DIM AS(2,299)  
70 AZ=1  
80 BX=0  
90 XZ=19  
100 file$="New knowledge base"  
110 MODE6  
120 REM Switch cursor off  
130 VDU 23;8202;0;0;0;  
140 REM Omit the following line  
if using tape  
150 SOUND 811,-4,SX,2  
160 :  
170 DEF PROCmain_program  
180 PROCscreen  
190 PROCcommand_interpreter  
200 PROCwhich_command  
210 END
```





## EXPERT SYSTEM SHELL

- New knowledge base

Right + left cursor keys + Return  
ENTER EDIT Expert LOAD SAVE

Input problem

?CAR WON'T START

LEADS: BATTERY DEAD: SPARK PLUG FAULTY

Input LEAD you wish to investigate

?BATTERY DEAD

-USE JUMP LEADS

Knowledge base -

```
23 IF THEN
24 IF THEN
25 IF THEN
26 IF THEN
27 IF THEN
28 IF THEN
29 IF THEN
30 IF THEN
31 IF THEN
```

The Electron expert system tracing a car fault

Shell, you can simply enter this fact and conclusion.

Any single fact might have a number of conclusions. "Screen is fuzzy" could be the result of a number of things, like a video circuit blowing, a monitor fault, a damaged socket, and so on.

Expert Shell however, will cope with any number of identical facts, and will list the possibilities, giving you the option to investigate further. If a great number of possibilities flash before your eyes, then use the Control+Shift keys to slow things down.

Rather than just regurgitating conclusions of IF ... THEN statements - which would be a pretty unintelligent program by anyone's standards - Expert Shell relates rules by backward chaining.

This is a technique by which identical facts and conclusions of different rules are

chained together to get to the root of a problem. For example, if you entered two rules like:

```
1 IF screen snowy
  THEN video circuit fault
2 IF video circuit fault
  THEN short circuit
```

Clearly, the conclusion of rule one is the same as the fact of rule two. A program which didn't backward chain would mindlessly ignore one of these rules, which are obviously related. Expert Shell on the other hand, using the Expert option allows you to investigate further by backward chaining the whole knowledge base.

The order in which you enter rules makes no difference, but you must be careful to

ensure that rules which are connected are entered using the same wording. For instance, "fuse blown" is not the same as "fuse has blown".

To turn your micro into an expert system first enter and save the program listing. Type RUN and you'll see a menu at the top of the screen with the rules scrolling in a window below.

Let's turn the Electron into a car mechanic. Using the cursor keys, move the pointer left to the Enter option and press Return - you'll be prompted to enter rule one. Type:

CAR WON'T START

and press Return. Now type:

BATTERY DEAD

pressing Return again. That's the first rule - if the car won't start then the battery must be dead. Now for the second rule. Press Return to select the Enter option and type:

CAR WON'T START

and:

SPARK PLUG FAULTY

Rule three is:

BATTERY DEAD

and:

USE JUMP LEADS

Now you've got the beginnings of an expert system. You can test it by moving the menu pointer to Expert using the cursor keys and selecting it with Return. You'll then be prompted to type in your problem. Enter CAR WON'T START and you'll be told BATTERY DEAD, SPARK PLUG FAULTY. Now enter BATTERY DEAD and the system will tell you to USE JUMP LEADS.

Clearly the system is very limited, but it can easily be improved by typing in more rules and conclusions. The whole knowledge base can be saved to disc or tape at any point and reloaded next time you require it.

```
220 :
230 DEF PROCscreen
240 VDU19,3,1,0;0;19,0,7;0;
250 VDU26,12,41F,10,0:COLOUR129
:COLOUR0:PRINT"EXPERT SYSTEM SHEL
L"
260 COLOUR128:COLOUR1:PRINTTAB(
0,2);" - ";file$
270 VDU81F,1,4:PRINT"Right + le
ft cursor keys + Return"
280 VDU81F,1,14:PRINT"Knowledge
base -"
290 COLOUR129:VDU28,0,24,39,15,
12,28,0,13,39,5,12,26
300 VDU81F,1,5:COLOUR0:PRINT"
ENTER EDIT Expert LOAD SAV
E"
310 COLOUR129:PROCsquare
320 ENDPROC
330 :
340 DEF PROCcommand_interpreter
350 REM Enable escape key
```

```
360 *FX14,6
370 REPEAT:UNTIL NOT INKEY(-74)
380 ONERRORIFERR=33GOTO420
390 REPEAT
400 IFINKEY(-122) AND XX<36XX=X
X+1:VDU26:PROCsquare
410 IFINKEY(-26) AND XX>4XX=XX-
1:VDU26:PROCsquare
420 IFINKEY(-74)ENDPROC
430 BX=BX+1
440 PROCwindow_computations
450 IFINKEY(-74)PROCwhich_comma
nd
460 UNTILINKEY(-74):PRINT"RETUR
N"
470 ENDPROC
480 :
490 DEF PROCwhich_command
500 PROCsound
510 IF XX>3 AND XX<9 PROCcenter
520 IF XX>11 AND XX<16 PROCedit
530 IFXX>17 AND XX<24 PROCinfer
```

```
ence_engine
540 IF XX>25 AND XX<30 PROCload
550 IF XX>32 AND XX<37 PROCsave
560 GOTO190
570 ENDPROC
580 :
590 DEF PROCcenter
600 VDU28,1,13,39,7
610 *FX15,1
620 *FX13,6
630 IFAX=300:PROCsound:PRINT;"K
nowledge base full":GOTO190
640 ONERRORGOTO190
650 PRINTTAB(0,6)
660 PRINT;AX;" IF ";:INPUT$(1
,AX)
670 REPEAT:UNTIL NOT INKEY(-74)
680 PRINT " THEN ";:INPUT$(2
,AX)
690 AX=AX+1
```

Turn to Page 46 ▶



# Here's how you can get the very best out of your Electron

Within the pages of these three books you'll find ALL the information you need to fully harness the power of your Electron. They cover Basic, machine-code programming and the operating system, and between them they also show how to combine all three to create more powerful and effective programs.

For the give away price of just £7.95 for the three, these books represent exceptional value and are a must for any serious Electron user.

## Electron Advanced User Guide

This detailed guide to the Electron's operating system is packed full of invaluable information. It shows you how to:

- Implement the powerful \*FX/OSBYTE calls
- Write your own paged roms
- Program the ULA
- Make every byte count where program space is tight
- Use the Electron's exciting capabilities to the full by following the complete circuit diagram
- ...and much, much more.

This essential handbook will help you to exploit the full potential of your Electron. And for just £2.95, saving £6.50 off the recommended price, can you afford not to miss this offer?

## Electron Assembly Language

The Electron Assembly Language reference guide will help you get to grips with machine code in next to no time. Whether you're a beginner or are already fairly proficient, there is something for you in this book.

It has over 200 pages packed with hints, tips and example programs on subjects ranging from basic hex, binary and decimal number theory and logical operators, through addressing modes, stacks and loops, to subroutines, jumps and calls.

Every aspect of machine-code programming is covered in this book in a friendly, readable style, and there's also a comprehensive index. If you want to get more out of your micro, but thought machine code was indecipherable, this is the book for you. *Save £3 off the recommended retail price.*

## Getting started in BBC Basic on the BBC Micro & Electron

This is the ultimate guide available on BBC Basic. Written by a leading expert on the language, it will lead you through each Basic function in a simple, easy-to-follow style.

Whether you are a beginner or more advanced, there are examples of commonly-needed routines and neat tricks you can use to make Basic jump through hoops.

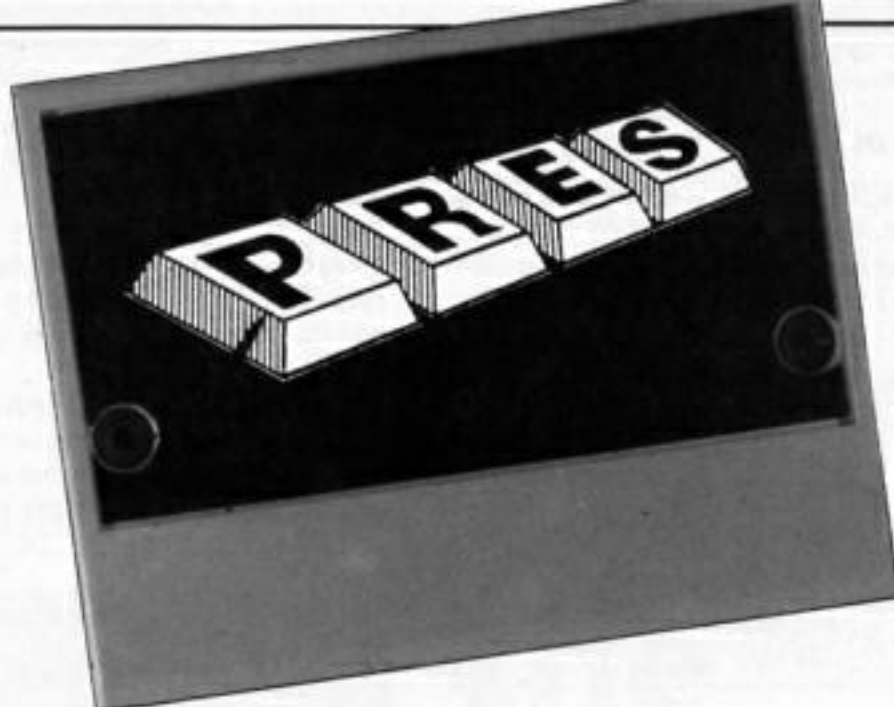
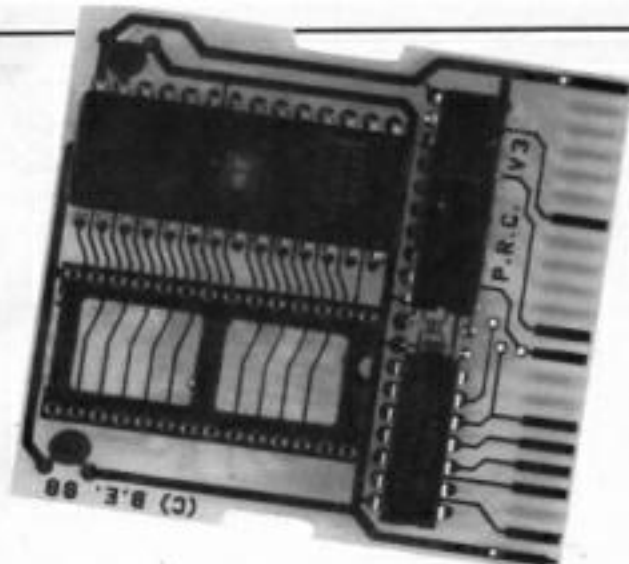
By working through its many examples you will gain a clear insight into structured programming and will quickly acquire the ability to use structured techniques in creating your own programs. *Save £3 off the recommended retail price.*

**Only  
£7.95 for all three**



**TO ORDER PLEASE USE THE FORM ON PAGE 45**





**O**NE of the most powerful and complex utility roms available for the Electron, Advanced Basic Editor Plus, is about to be launched by Pres. It was originally produced by Acorn for the BBC Micro, but now Pres has converted it for the Electron, adding a few enhancements along the way.

It is available as either a rom cartridge or rom module – a bare rom in a small carrier that can be plugged in to a rom socket. The cartridge priced at £36.80 and the rom at £28.69 aren't cheap by Electron standards, but like many Pres products, are compatible with the BBC Micro and Master.

Plug the cartridge in to the Plus 1, type \*BE and the editor takes over offering more than 30 commands, plus another 14 from a utilities menu accessed using the UTILS command.

The best description of Advanced Basic Editor Plus is that it combines the features of View with Basic's built-in program editor. Like Basic, the editor has LOAD and SAVE commands, however once loaded, the program isn't listed with LIST – like View you tap the Escape key and go to text editor mode.

The program is listed on the screen and, like View, you can move the cursor around the screen and type in either insert or overwrite mode. New lines can be created simply by hitting Return. A space is opened up and a line number is automatically chosen for you. If necessary, the program is renum-

# Advanced listings editor

**A powerful new Basic program editor gets a thorough preview by Roland Waddilove**

bered to make room for a new line number.

Like View, it has global search and replace facilities. This is useful for renaming variables, for instance, a single command will replace all occurrences of *delay*

with *pause*. A marker can be placed in the listing and a single command will take you back to that point. It's useful for remembering your position when browsing forward or backward through the listing.

Moving the cursor to the top or bottom of the screen scrolls the listing up or down. You can also jump forward or backward one screen at a time or to the first or last line with a single keypress. Scrolling can be disabled if you prefer.

Pressing Escape takes you back to command mode where you have the options to save your modified program, run it or return to Basic. Once back in Basic the program is stored at PAGE like any other, so you can load, list, save, modify or run it as you like.

Advanced Basic Editor Plus is more than a simple text editor, it has a whole host of utilities and commands designed to make the process of entering and modifying programs much quicker and easier.

It will compact a program, taking out REMs and blank lines, shortening variable and procedure names and linking short single statement lines together to make long multi-statement ones. The process can be reversed to a certain extent – it can't replace your comments however, but it will split multi-statement lines.

Programs can be listed in a formatted style rather like LIST07, but also splitting multi-statement lines. The output can be sent to the printer as well as the screen.

The Advanced Basic Editor Plus is most useful for structured programmers that

## The BASIC Editor Plus

Program size : 1647  
Bytes free : 16529  
Screen mode : 6

### >HELP

APPEND P	000	OVERTYPE
BACK c	INFO	QCHANGE s1 s2
CHANGE s1 s2	INSERT	RENUMBER n1 n2
END	IT	RUN
EDIT s	LOAD P	SAVE P
EXIT	LABEL	SCROLL
FIND s	MODE n	TOP
FORE c	NEW	TAB n
GOTO	NOSCROLL	UTILS
HELP	NUMBER	UPDATE
IE	OLD	
	n	

Where: p is a program;  
s, s1, s2 are strings;  
n, n1, n2 are numbers;  
c is a colour (N,R,G,Y,B,M,C,W).

>

The HELP facility provides a brief summary of the commands available

Turn to Page 20 ►



#### ◀ From Page 19

avoid GOSUBs and the often abused GOTO statement. However, if you must use them labels can be substituted instead of line numbers. These take the form of:

```
110
120 GOTO @here
130
.
.
.
360
370 REM @here
380
```

The program can't be run with these labels as they are used for editing purposes only. The NUMBER command instructs the editor to replace all label references with the correct line numbers.

Merging programs is simple using the intelligent APPEND command. It takes a file from tape or disc and adds it to the end of the one in memory. Don't worry about line numbers clashing, as the imported program will be renumbered to continue from the last line of the resident one.

The only problem experienced with the software was with the VLIST command, which can be used to display all the variables used and their values after running a program. I was so eager to try out the Basic

Editor I didn't read the manual, loaded a program and entered \*VLIST x. The result was one crashed micro.

The fact that I've got every rom and add-on except the kitchen sink plugged into my Electron may have something to do with it, and the command does work if entered correctly.

Apart from that minor glitch I was very impressed with the Advanced Basic Editor Plus. It is probably the most powerful software to be released for the Electron for a

long time. If you spend a large proportion of your time entering, editing, running and debugging Basic program listings I can fully recommend this most useful package.

Product: Advanced Basic Editor Plus  
Price: £36.80 (cartridge)  
£28.69 (rom module)  
Supplier: Pres, PO Box 319, Lightwater,  
Surrey GU18 5PW.  
Tel: 0276 51427

### The BASIC Editor Plus

Program size : 3182  
Bytes free : 13458  
Screen mode : 6

#### >INFO

Scroll on  
Overtyping mode  
White on blue

Program name: EXPERT  
Last search : None

Tab value : 5  
First line : 10  
Current line: 10  
No. of lines: 162  
Last line : 1620  
Marked line: None

Pending commands: None

INFO provides information about the program and editor

# NEW! for the Electron

# KEYWORD

"5.25" version now available

## The dynamic word finder for home and business use

Now you need never be stuck for a word again because Keyword contains dozens of synonyms for over 12,000 words.

And it's so easy to use. Just type in a word and straight away you'll be offered a huge list of alternatives. Then, using the cursor keys you can select the word that's nearest to your liking.

Or if it's not exactly the one you're looking for, just press return to home in on another, more closely, related set of words – and so on.

With Keyword you'll be able to quickly and effectively make use of the complete wealth of the English language, and once you've used it you'll wonder how you ever managed without it.

And the best news of all is the price. Just £19.95, plus you get a FREE calculator watch!

- Easy to use
- Over 12,000 synonyms and antonyms
- Nearly 1,000 main subject headings
- Extra rapid word search
- Can select over 70 words at a time
- Simple operation
- Flexible 'roam' facility
- Can be used as a Thesaurus
- 40 track disc contains 4,500 words

Watch offer extended – for one month only

## Special Introductory Offer

## SAVE £4.95

We will send one of these superb calculator watches, worth £4.95, to the sender of every order for Keyword we receive before 31st August, 1989

In case of high demand we reserve the right to replace this watch with one of equal or better value



### ORDER FORM

Please send me a copy of Keyword for the following:

5.25" DFS (40T)	£19.95	<input type="checkbox"/>
5.25" DFS (80T)	£19.95	<input type="checkbox"/>
3.5" ADFS	£19.95	<input type="checkbox"/>

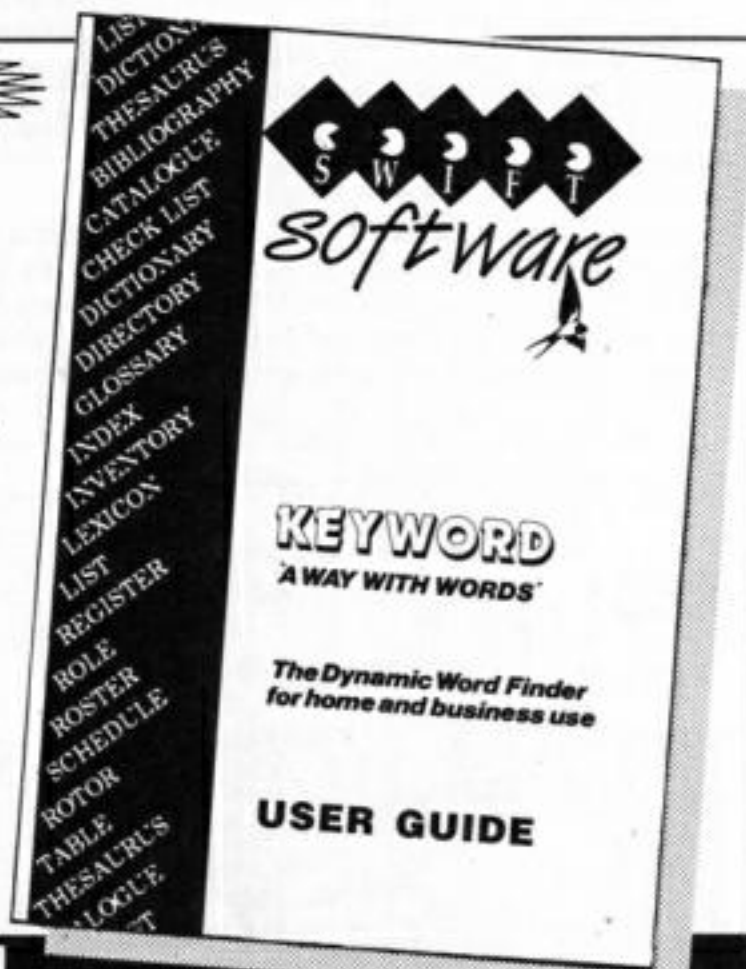
Name .....

Address .....

Post Code ..... Tel: .....

I enclose a cheque/Euro cheque/PO made payable to SWIFT SOFTWARE.

Swift Software, EU9,  
347 London Road,  
Hazel Grove,  
Stockport,  
SK7 6AA.  
Tel: 061-477 8405





# electron user ARCADE CORNER

Share your hints, tips and cheat modes with fellow *Electron User* arcade addicts, but please ensure they are all your own work. Send them to:

Arche Corner, Electron User,  
Europa House, Adlington Park,  
Adlington, Macclesfield, SK10 4NP.

## Timely cheat

### Repton Thru Time - Superior Software

If you are still struggling with *Repton Thru Time*, John and David Pitcher of Worcester provide some relief with the passwords and edit codes.

You can now start on the screen of your choice, temporarily skipping the more difficult ones.



PREHIST			EGYPT		VICTORI		NOW		FUTURE	
1	PREHIST	12345	EGYPT	8473	VICTORI	54066	NOW	54524	FUTURE	33776
2	HEATERS	16494	FAVOURS	5012	MERCURY	57950	OCTAGON	21370	ORACLES	1119
3	HILLOCK	29652	HAPPENS	48238	CLEAVER	62809	CASTLES	48417	STAPLER	36126
4	PILFERS	28265	PERSONS	2248	BINDERS	31463	CHARLES	9698	DANCING	46223
5	MEDIATE	25655	CONQUER	31761	CONFUSE	35584	GREATER	58449	FANCIER	48475
6	COMPACT	9761	EVENING	19495	JINGLES	10659	BOOKLET	23963	BANANAS	34409
7	CARTOON	43981	MASTERS	52592	DOLPHIN	45367	FUNTIME	64332	EVEREST	54136
8	TUBULAR	35862	PIMPLES	51035	MINSTER	23180	SAVOURS	29294	KINGDOM	53546

## Playing with fire



### Firetrack - Superior Software

HERE is a cheat mode for the brilliant shoot-'em-up *Firetrack* - the star of Superior's Sam 7 compilation. It's supplied by Ashley Wong of Streatham, London. Load the game as normal and instead of pressing the spacebar to start the game, press Z, X, C and spacebar simultaneously. You'll start the game with 50 lives, which should be enough to get you through the first few levels.

Ashley also reports that Imogen on Sam 5 can be completed with at least 14 transformations remaining. So it is still possible to complete the game even if you make a few early errors. The message is: Don't give up too soon!

## Pass the word...

### Breakthrough - Audigenic

PASSWORDS to Audigenic's superb puzzler, *Breakthrough* are provided by Paul Sanderson of Chesterfield.

When the game has loaded press Return for the menu then C to select the starting screen. Type a number and press Return. Now enter the password, again pressing Return. The game will start on the selected screen.



### Screen Password

- 5 MAINTAIN
- 10 TUNGSTON
- 15 SYMPATHY
- 20 INFINITY
- 25 MICRODOT
- 30 SCRUTINY
- 35 WITHDRAW
- 40 LIGAMENT
- 45 ESTIMATE
- 50 PROLOGUE
- 55 SOFTWARE
- 60 RETRIEVE
- 65 TOBOGGAN
- 70 VENDETTA
- 75 DIAMETER
- 80 RHAPSODY
- 85 SPECIMEN
- 90 MONORAIL
- 95 TERMINAL



# Topologika on

**T**HE golden beams of this Indian summer are still casting shadows from the castle battlements as I once more sit here and hold forth to your scrolls and parchments.

Perhaps the best news this year came in the form of a press release and a 5.25in disc from Topologika (formerly Chalksoft). You will all I am sure be delighted to hear that the company has now released versions of all its popular text adventures for the Electron.

Priced at £14.95, Countdown to Doom, Acheton, Kingdom of Hamil and Philosophers Quest are now all available on 3.5 and 5.25in discs for any Electron fitted with an ACP Plus 4 disc interface.

Also available from Topologika is a brand new game by Jonathan Partington – author of Kingdom of Hamil – called Avon. This adventure is based on a Shakespearean theme and the pack also includes another game called Murdac.

Both are excellent high quality jaunts, even though the price of £17.50 may deter some adventurers from parting with their hard-earned groats. You'll find reviews of both in this month's software pages.

I also received an interesting epistle from recently retired Jeff Rock. He explains that he has only played one Electron adventure, Adventure, by Micropower.

He completed it after a bit of a struggle but was puzzled by illogicalities, such as having to kill the dragon with bare hands while you are carrying a sharp axe, and puerile comments made as the adventure progresses.

He was not at all impressed and questions whether this one is typical of all Electron adventures. Well, I can assure Jeff – and others – that Micropower's Adventure is thankfully not typical. It is rather old – published in 1984 – and includes a restricted parser, hackneyed problems and a poor plot.

## a top note

If newcomers or novices are looking for good adventures with which to get started, I can wholeheartedly recommend any of the Scott Adams or Larsoft games, such as Voodoo Castle, Adventureland, The Nine Dancers and Wychwood.

A hefty missive also found its way to the castle from an anonymous adventurer who signs himself: One trusted with so much, but knows so little.

This shady character asks whether D.U.P.E. – mentioned in the April issue of *Electron User* – is available to the public in this country yet? Sorry, but the answer is no. I may have already mentioned this, but D.U.P.E. was exactly as its name implies.

The changeling also asks whether the old Melbourne House games are still available for the Electron. The answer to this query is less straightforward. Melbourne House is now owned by Virgin/Mastertronic and as far as I am aware the games mentioned are now deleted for the Electron. However, mail order companies such as Mithras, Impact and Towerhill still keep some old stock and may be able to help you in your quest.

A final question centres on which BBC Micro adventures work on an expanded Electron with a Slogger Master Ram Board. Lists of such adventures appeared in the November 1987, April 1988 and August 1988 issues of *Electron User*.

Finally, this month's featured map is of the



Opening  
Quest

opening scenario to Epic's classic Quest for the Holy Grail. This should help many adventurers who are stuck at the outset of this superb adventure.

● Next month I continue this series with a guide to the openings to Riverdale's excellent Suds. So until Shakespeare turns in his grave, happy adventuring.

## Overture and Beginners

WE have looked at just about every aspect of adventuring in this long running series. But let's just take a little time now to examine the core of any adventure – riddles or puzzles. They come in all forms and guises and sometimes may be so heavily veiled that you may not even recognise them as puzzles at all.

In the best adventures the problems are an intrinsic part of the plot, not merely tacked on as intellectual appendages.

While puzzles may be interlinked, you should not be compelled to solve them in a strictly linear fashion. Nothing can be more frustrating than getting stuck near the beginning of an adventure where failure to solve one particular teaser prevents you from making further progress.

Even so-called classics such as Myorem and Island of Xaan fall into this trap. In both these games you must solve some very tricky early puzzles to be allowed to get even a small way into the adventure.

In Myorem you must first find a way of escaping from the firing squad then immediately

work out how to extricate yourself from a quickly flooding ditch. The materials are all at hand and the solution is logical – tie an oil drum with a piece of vine and use it as a raft. However, it is infuriating that you can only explore eight or nine locations. Indeed, in Xaan you only have two initial locations to explore!

Yet other adventures, such as all the Level 9 games and Village of Lost Souls allow a more exploratory early approach, which lets you get the gist of the puzzles and a feel for the game.

Many puzzles involve the manipulation of an object, the normal purpose of which may disguise the fact that it can be used in another way. It is therefore vital that you collect as many items as possible as you go on your travels – read my tips in the July issue of *Electron User*.

Not all the objects turn out to be useful. In Scott Adams' Pirate Adventure you will come across a mongoose, and realising that such creatures are skilled at killing snakes, you will probably cart it round for the whole game.

Near the end of the adventure, an uncrossable pit full of deadly snakes is found. You naturally assume that the mongoose will solve the problem – but the snakes kill the mongoose.

It transpires that it wasn't a mongoose after all, but a squirrel, and another means of disposing of the snakes must be found.

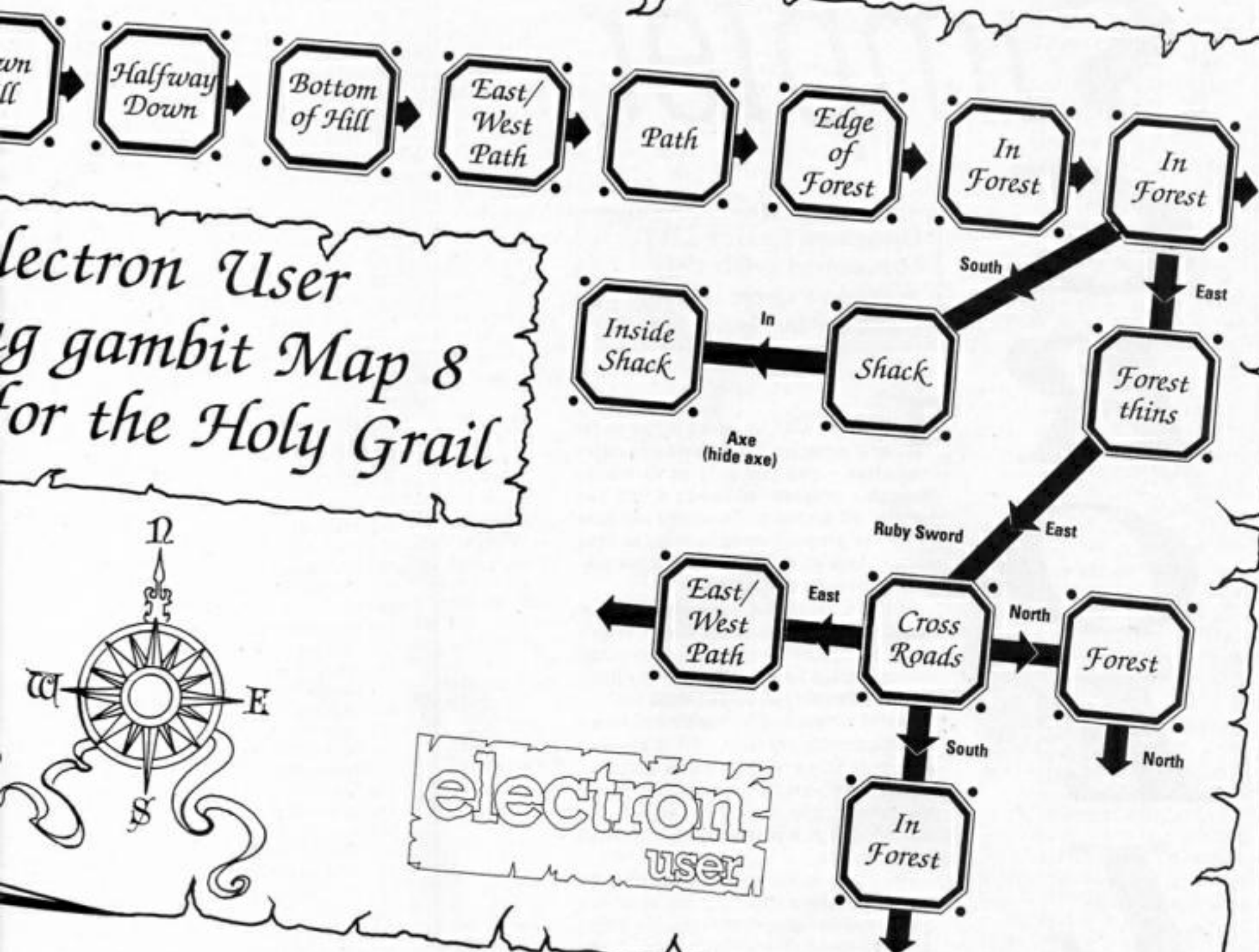
Rather a dirty trick on the part of the author, but no adventurer worth his salt should take everything at face value in these games.

In Colossal Adventure a fierce dragon sits on a rug. If you attempt to fight it, the program responds: "What, with your bare hands?" and most people at this point take the hint and look for other ways of overcoming the beast.

However, for anyone foolish enough to enter yes in answer to the question, the program goes on to describe how you manage to kill it with your bare hands, and adds that anything is possible in an adventure. Now where has that been mentioned before?

Without puzzles, adventures would be the poorer and the enjoyment less.





## Problems Solved

THIS month I feature a host of queries and answers on a whole host of Electron adventures.

First out of the bag is Carl Berry who asks a few questions about some older games. In Softek's **Five Stones of Anadon** he says that he has followed my previous advice, but can't find the cross. I suggest you search the ante-room north of the throne room.

In another Softek game, **Eye of Zoltan**, he explains that he can't open any of the doors. A piece of magic is called for, so drop the eye at the cavern and the doors will open for you.

Also, in Micropower's **Adventure** - getting a lot of mention this month - Carl is experiencing problems with the plant. The procedure is in fact quite simple: Water Plant, Water Beanstalk and Climb!

S. Walters of Ruislip asks how to get past the rat in the same game. I must have answered this query dozens of times in this column. So for one last time here goes ... Off Lamp, Hoot, On Lamp, Enter, Look.

Craig Campbell from Stirling is having problems in **The Nine Dancers**. He has successfully

completed part two of the game but can't enter the fairy kingdom. The route is fairly simple: After you have poisoned the dog you should climb the hill and enter the entrance at the top of the barrow.

Meanwhile, Andy Stevens is stuck in Larsoft's **Hex** as he can't cross the causeway. You ought to do a bit of waiting, Andy.

In yet another Larsoft adventure, **The Puppet Man**, Steven Kelk asks how to please the Muse of Comedy and thus complete part two of the game. Without giving it all away, you must indulge a bear, use a ladder and a wooden box, trap an owl and give an egg. Think about it for a while, then try again!

Darren Steer is stuck in Robico's **Project Thesius** and can't get past the dog at the cottage. The solution is straightforward Darren, just Drop the Rabbit and Open the Gate.

In Classic Adventure, R. Hetherington has found all the treasures but is unable to locate the Repository. Your solution is at hand. When you have dropped all the treasures at the building, just go to the Vast Hall to enter the Repository.

Finally, I must thank Ciaran Drain who has sent in a sprint finish to that oldie of all oldies, **Sphinx Adventure**. His solution does not enable full points, but takes you through the game quickly.

Here goes: North, Get Bottle, North, In, Get Keys, Get Lamp, Out, South, East, East, Down, Light Lamp, South, Get Carrot, West, West, Get Wand, East, South, Get Sword, Down, Get Food, West, Fill Bottle, East, North, Throw Water.

East, Wave Wand, Cross Bridge, Get Rug, North, Feed Rabbit, Carrot, East, North, East, South, South, Feed Crocodile, East, South, South, Up, Wave Wand, Down, North, North, West, West, North, North, West, South, West, South, East, South, South, Pay Troll, Cross Bridge.

West, South, North, East, East, Up, East, South, Kill Dragon with bare hands, Get Teeth, North, West, Down, Kill Ogre with sword, North, East, North, Down, Wave Wand, Cross Bridge.

North, West, West, Throw Teeth, West, North, East, North, East, East, West, East, South, North, South, East, West, East, South, North, South, East, West, East, South, North, Kneel, Wave Wand.



# Simpler CONTROL LING

**Upgrade Basic's LIST  
command with this  
machine code utility  
from John Geraghty**

**T**HE Basic LIST command is fine as far as it goes, but it does have one major limitation — you can only go forwards through a program and once a line has scrolled off the top of the screen you have to list the program again in order to have another look at it. This can make the program logic difficult to follow.

Blist is a handy machine code utility that puts an end to this state of affairs. With it installed in your Electron you can scroll backwards and forwards through any Basic listing. It works in any screen mode too.

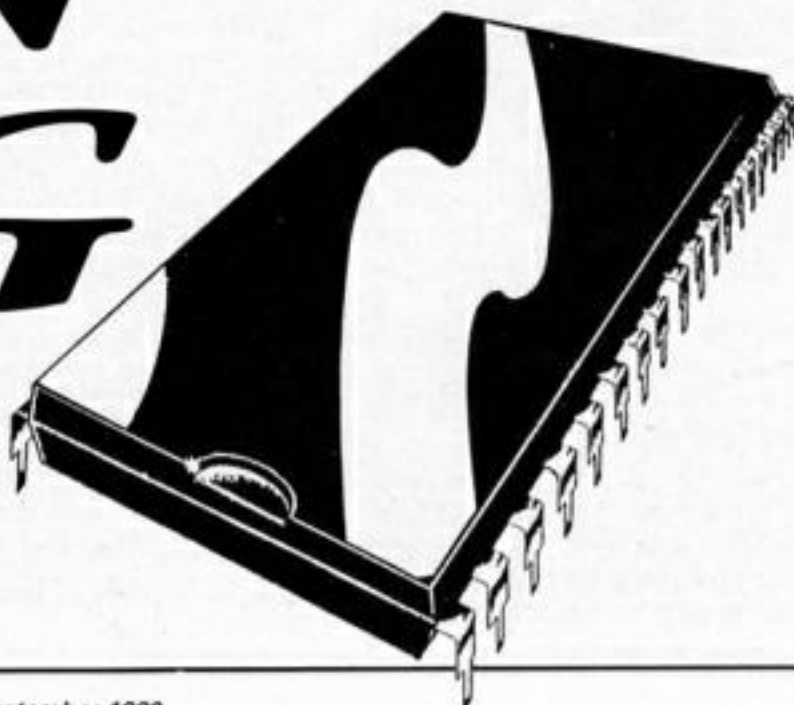
First of all type in the program and save it before attempting to run it — this is always a wise precaution with assembly language listings. Don't use the filename Blist as it is reserved for the machine code file. The object file, Blist, will automatically be saved to disc or tape.

The utility is enabled after saving the code. Press Return and you can scroll forwards and backwards through the listing with the Control and Shift keys. Press Escape to quit to command mode.

Whenever you want to use Blist in the future enter:

```
*LOAD Blist
CALL &B00
```

To list the program enter LINE either by itself or followed by a line number to start listing from. Use the Control and Shift keys to scroll as before. The machine code program occupies pages &B and &C, normally used for user-defined characters and function keys.



```
10 REM Back and forth lister
20 REM By John Geraghty
30 REM (c) Electron User
40 :
50 ON ERROR PROCerror
60 MODE6
70 PROCassemble
80 PRINT"Saving..."
90 OSCLI"SAVE BLIST"+CHR$32+"B
00"+CHR$32+STR$PX
100 CALL intercept
110 PRINT""Press Return, then
use""CTRL and SHIFT to scroll li
sting..."
120 *FX15
130 REPEAT UNTIL GET=13
140 ?&1F=1:REM LIST01
150 LINE 560
160 END
170 :
180 DEF PROCassemble
190 IF ?&20F<&C0 CALL &B19
200 temp=&70
210 scr_flag=&72
220 count_flag=&74
230 oldaddr=&75
240 count=&77
250 rows=&78
260 previous_line=&7A
270 width=&7C
280 :
290 ptr_index=&80A
300 lineaddr=&80B:REM=ptr
310 top=&12
320 page=&18
330 listo=&1F
340 inta=&2A
350 brkv=&202
360 wrchv=&20E
370 pos=&318
380 vpos=&319
390 wind_rt=&30A
400 wind_lft=&308
410 wind_bot=&309
420 wind_top=&30B
430 :
440 osnewl=&FFE7
450 oswrch=&FFEE
460 osrdch=&FFED
470 osbyte=&FFF4
480 :
490 basic=&8AF3
500 no_spaces=&8A97
510 decode=&97DF
520 print_num5=&9923
530 print_num0=&991F
540 linesrch=&9970
550 print_tkn=&B50E
560 :
570 FOR pass=0 TO 2 STEP2
580 PX=&B00
590 EOPT pass
600 .intercept
610 LDA #count_char DIV&100
620 PHA
630 LDY #count_char MOD&100
640 LDY #scroll_chk MOD&100
650 STA count_flag
660 :
670 .vectors
680 SEI
690 STA wrchv+1
700 PLA
710 STA brkv+1
720 STY wrchv
730 STX brkv
740 CLI
750 RTS
760 :
770 .off
780 LDA #&B4
790 PHA
```



800 LDA #8DE	1600 LDA wind_rt	2380 .inc_lineaddr	3190 STA previous_line
810 LDY #82D	1610 SEC	2390 LDY #3	3200 LDY #3
820 LDX #802	1620 SBC wind_lft	2400 LDA (lineaddr),Y	3210 ADC (temp),Y
830 BNE vectors	1630 STA width	2410 CLC	3220 STA temp
840 :	1640 INC width	2420 ADC lineaddr	3230 LDA temp+1
850 \intercept oswrch to get nu	1650 \CLS	2430 STA lineaddr	3240 STA previous_line+1
mber of screen rows a detokenised	1660 LDA #80C	2440 BCC top_test	3250 BCC decla1
line will occupy	1670 JSR oswrch	2450 INC lineaddr+1	3260 INC temp+1
860 .count_char	1680 \PRINTTAB halfway down scre	2460 .top_test	3270 BCS decla1
870 PHA	en	2470 LDY #1	3280 .decla3
880 LDA count_flag	1690 LDA #81F	2480 LDA (lineaddr),Y	3290 LDA temp
890 BNE no_count	1700 JSR oswrch	2490 BPL not_top	3300 CMP lineaddr
900 PLA	1710 LDA #0	2500 .page_line	3310 BNE decla2
910 LDA count	1720 JSR oswrch	2510 LDY #0	3320 TYA
920 CMP width	1730 LDA wind_bot	2520 STY lineaddr	3330 BEQ back_to_top
930 BNE inc_ok	1740 SEC	2530 LDA page	3340 LDA previous_line
940 LDA #0	1750 SBC wind_top	2540 STA lineaddr+1	3350 STA lineaddr
950 STA count	1760 LSR A	2550 INY	3360 LDA previous_line+1
960 INC rows	1770 JSR oswrch	2560 LDA (lineaddr),Y	3370 STA lineaddr+1
970 .inc_ok	1780 JMP into_forwards	2570 BPL not_top	3380 RTS
980 INC count	1790 :	2580 \if no prog in mem	3390 :
990 .no_print	1800 .forwards	2590 .escape	3400 .list
1000 RTS	1810 \cursor beside line num; mu	2600 \cursor to bot of screen	3410 LDY #1
1010 .no_count	st be underneath for next line	2610 LDA #81F	3420 LDA (lineaddr),Y
1020 PLA	1820 LDA #80A	2620 JSR oswrch	3430 STA inta+1
1030 JMP !wrchv	1830 JSR curs2	2630 LDA #0	3440 INY
1040 :	1840 JSR inc_lineaddr	2640 JSR oswrch	3450 LDA (lineaddr),Y
1050 .scroll_chk	1850 .into_forwards	2650 LDA wind_bot	3460 STA inta
1060 PHA	1860 \get number of rows line wi	2660 JSR oswrch	3470 JSR print_num5
1070 TYA	ll occupy on screen	2670 BRK	3480 LDY #3
1080 PHA	1870 JSR get_rows	2680 BRK	3490 LDA listo
1090 \remove leading spaces	1880 BNE to_screen \always	2690 EQU\$ "Escape"	3500 BEQ list_loop
1100 JSR no_spaces	1890 .backwards	2700 BRK	3510 LDA #82D
1110 \LINE token?	1900 JSR dec_line_addr	2710 :	3520 JSR oswrch
1120 CMP #886	1910 JSR get_rows	2720 .get_rows	3530 .list_loop
1130 BEQ line_tkn	1920 JSR curs1	2730 LDY #8FF	3540 INY
1140 \OFF token?	1930 .to_screen	2740 STY count	3550 .list_loop2
1150 CMP #887	1940 JSR list	2750 INY	3560 LDA (lineaddr),Y
1160 BNE exit	1950 \preserve vpos	2760 STY count_flag	3570 CMP #88D
1170 JSR off	1960 LDX vpos	2770 STY rows	3580 BEQ linetkn
1180 BRK	1970 \cursor up beside line numb	2780 JSR list	3590 CMP #80D
1190 EQU\$ 99	er	2790 INC count_flag	3600 BEQ endlist
1200 EQU\$ "Disabled"	1980 JSR curs1	2800 .not_top	3610 JSR print_tkn
1210 BRK	1990 :	2810 RTS	3620 JMP list_loop
1220 :	2000 \list screenful	2820 :	3630 .endlist
1230 .line_tkn	2010 LDA scr_flag	2830 .get_addr	3640 JMP osnewl
1240 JSR no_spaces	2020 BMI up_again	2840 JSR linesrch	3650 .linutkn
1250 \CR or number token?	2030 BNE down	2850 \if line found, (83D;83E) p	3660 STY ptr_index
1260 CMP #80D	2040 LDA vpos	oints to CR+3; else points to CR	3670 JSR decode
1270 BEQ first_line	2050 CMP wind_top	at start of next line...	3680 TYA
1280 CMP #88D	2060 BNE backwards	2860 LDX #3D	3690 PHA
1290 BEQ get_line	2070 INC scr_flag	2870 LDY #3E	3700 JSR print_num0
1300 :	2080 .down	2880 BCS not_found	3710 PLA
1310 .exit	2090 CPX wind_bot	2890 DEX	3720 TAY
1320 PLA	2100 BNE forwards	2900 DEX	3730 JMP list_loop2
1330 TAY	2110 DEC scr_flag	2910 DEX	3740 :
1340 PLA	2120 DEC scr_flag	2920 CPX #8FD	3750 .inkeys
1350 JMP !brkv	2130 .up_again	2930 BCC not_found	3760 LDY #8FF
1360 :	2140 CMP #8FE	2940 DEY	3770 LDA #881
1370 .first_line	2150 BEQ main_loop	2950 .not_found	3780 JMP osbyte
1380 JSR page_line	2160 LDA oldaddr	2960 STX lineaddr	3790 :
1390 BPL set_screen \always	2170 CMP lineaddr	2970 STY lineaddr+1	3800 .curs1
1400 :	2180 BNE backwards	2980 RTS	3810 LDA #80B
1410 .get_line	2190 LDA oldaddr+1	2990 :	3820 .curs2
1420 DEC ptr_index	2200 CMP lineaddr+1	3000 .back_to_top	3830 LDY rows
1430 JSR decode	2210 BNE backwards	3010 \carry set always	3840 INY
1440 JSR get_addr	2220 DEC scr_flag	3020 LDA top	3850 .curs_loop
1450 JSR top_test	2230 :	3030 SBC #2	3860 JSR oswrch
1460 :	2240 \in main loop, scroll up or	3040 STA lineaddr	3870 DEY
1470 .set_screen	down	3050 LDA top+1	3880 BNE curs_loop
1480 \preserve initial line addr	2250 .main_loop	3060 SBC #0	3890 RTS
1490 LDA lineaddr	2260 LDX #FF	3070 STA lineaddr+1	3900 J:NEXT:ENDPROC
1500 STA oldaddr	2270 BMI escape	3080 .dec_line_addr	3910 :
1510 LDA lineaddr+1	2280 \CTRL?	3090 LDY #0	3920 DEF PROCerror
1520 STA oldaddr+1	2290 LDX #8FE	3100 STY temp	3930 REPORT
1530 \set non_paged mode	2300 JSR inkeys	3110 LDA page	3940 IF ERR=17 PRINT"
1540 LDA #80F	2310 BCS backwards	3120 STA temp+1	at line ";
1550 JSR oswrch	2320 \SHIFT?	3130 .decla1	ERL:END
1560 \screen flag used when list	2330 LDX #8FF	3140 LDA temp+1	3950 PRINT":":\$870D=
ing first screenful	2340 JSR inkeys	3150 CMP lineaddr+1	"LIST"+STR\$
1570 LDX #0	2350 BCS forwards	3160 BEQ decla3	ERL:\$871D=
1580 STX scr_flag	2360 BCC main_loop	3170 .decla2	\$88AF6:18718=88B0B4C:CA
1590 \get window width	2370 :	3180 LDA temp	LL \$871D



Don't miss out on the mass of material that's appeared in *Electron User* over the past few months. Bring yourself up to date with this back issue bundle, packed with games, utilities, features and programming tutorials.

Here's what you'll find in the  
March 1989 – August 1989 bundle:

**March 1989 issue:**

**Games:** Taktiks, Trivia Test, Bomb Disposal, Sprog.  
**Utilities:** Search and Replace, Poetry. **Features:** Map of The Nine Dancers. Disc directories explored. **Reviews:** Repton Infinity, Question of Sport, Zenon, Last Ninja. Advanced File Manager.

**April 1989 issue:**

**Games:** Diamonds – a mind bending puzzle. **Utilities:** Pattern fill routine, automatic program saver, Home Finance Manager. **Features:** Input routines explained, disc drives revealed, palindromic numbers explored. **Reviews:** Sam 6, Exile, Orbital.

**May 1989 issue:**

**Games:** Eliminator. **Utilities:** EZ Type, DFS disc formatter. **Features:** Tournament sorts, Party Cocktail Creator, Landscape Designer, Fractal Generator. **Reviews:** Barbarian II, Circus Games, Superman, Mode 7 Simulator Rom.

**June 1989 issue:**

**Games:** Tic Tac Rhymes, Duel. **Features:** ADFS osword calls explained, creating customised tapes, maps to Woodbury End and Palace of Magic. **Utilities:** Disc-based database, new CIRCLE graphics command, Morse Code Tutor. **Reviews:** Holed Out, Tank Attack, Sam 7.

**July 1989 issue:**

**Games:** Jet Bike arcade adventure, educational fun with Ladder Adder, Time bomb arcade fun. **Utilities:** Speedy Reader. **Reviews:** Predator, Stormcycle, Sam 8. **Features:** Jafa Systems interview, Disc error codes documented, 10 Liners, Philosophers Quest and Palace of Magic mapped.

**August 1989 issue:**

**Games:** Rollerball, Bingo. **Reviews:** Alps, Turtle Worlds, White Magic, Play it Again Sam 9. **Features:** Map of Kayleth, Repton Infinity tips. **Utilities:** Disc Housekeeper, Mode 2 screen compacter, Titration, Chemical Equations.

# electron

  
user

## BACK ISSUE BUNDLE

**Everything you  
ever wanted to  
know about your  
Electron but were  
afraid to ask is in  
these back  
issues of  
Electron  
User**

Only £1.50  
each or  
**£7.99**  
for all six



**TO ORDER PLEASE USE THE FORM ON PAGE 45**



# DATA *delver*

**Y**OUR ever-growing collection of *Electron User* magazines is an invaluable source of programming tips, articles and reviews. Often however, finding the exact item you're looking for can be difficult, especially if you have several year's worth to thumb through.

Searching for a useful tip you can vaguely remember from Micro Messages, or the address of a software company that you noted down on a scrap of paper and then lost is very frustrating. Also sometimes it would be handy to have all the references to a single subject at your fingertips – for instance, to compare the merits of disc systems.

Ceemags, the program presented here, is a solution to these problems which can be used with both tape and disc systems. To go some way towards overcoming the limitations of the tape system, the programs and data files are saved in a special format which loads 30 per cent faster than normal, and the data is compressed to around 65 per cent of its original length.

Useful memory is maximised by using Mode 6 with palette switching to add a little colour and by removing redundant initialisation procedures after they have done their work.

First type in the listing. It contains assembly language sections, so save it before attempting to run it. That way your work won't be lost if you've made a typing mistake.

When the program is run you'll be presented with a menu with two choices – Start new file and Load old file. Select the first and enter a filename at the prompt.

You'll then be presented with a second menu. Select Make new entry and you're ready to start entering records. Type the magazine title, its cover date, the page of the item, its title and a brief descriptive text. Continue entering records and press Escape when you have finished.

A point worth noting is that the text compression routine works better with lower case letters, so use capitals sparingly.

You should now be at the second menu – pressing Escape always takes you back to the last menu. You can select Set prefix and enter the magazine title and date. When you next add records these two fields will auto-

**Keep track of all your magazine information with this user-friendly database provided by John Geraghty**

matically be filled in for you.

The last option on this menu is Search. You can choose to have printer output for a hard copy or display the information on the screen. If you select this and get a row of question marks on the screen it means your printer is switched off or is off line.

You are then prompted for two strings to search for. If you entered Disc and Drive any entries with these two items would be displayed on the screen. You can leave the second search string blank and just enter the first one – Disc in our example – and press Return when prompted for the second. This searches for any records with the word Disc.

All records can be displayed by entering two null strings – press Return each time when prompted to enter a search string.

When a record is found and displayed on the screen you can continue to look for further occurrences by pressing Return, wipe the current record with Control+Delete, or amend it with Copy. With the last option select the field to alter with the spacebar and press Return to confirm.

When you've finished press Escape to get back to the first menu where you'll find an additional three options – Save, Rename and Restart. The first saves the data file to disc or tape, the second prompts for a new filename and Restart takes you back to the second menu.

When you've thoroughly tested the program enter this:

```
3660 PROCshorten
```

and save the program by typing:

```
PROCfast_save
```

The next time the program is used there will be more than 5k more free space for the data, and tape users will have a faster loading copy.

```
10REM CEEMAGS
20REM By John Geraghty
30REM (c) Electron User
40:
50MODE6
60ONERROR PROCerrort
70PROCinit:LOWEN=HIMEN-1100
80:
90REM constants
100escX=FALSE:buf1X=&700:buf2X=&c30

110str1X=buf2X:str2X=buf2X+&14:str3X=bu
12X+&30
120:

130PRINT"STRINGS(39,CHR$129)TAB(10,2)C
HR$128"Magazine Database"CHR$128
140:
150fil$="":mag$="":dat$="":topX=TOP+2
160:
170DEF PROCmenu1
180!PX=&1550
190REPEAT
200ON ERROR PROCerr(0)
210PROCcls(11)
220optX=FNmenu(11,11,5+3*(fil$=""),1)
230ON ERROR PROCerr(1)
240IF optX=0 PROCnew
250IF optX=1 PROCold
260IF optX=2 PROCsave
270IF optX=3 PROCname
280IF optX=4 PROCmenu2
290UNTIL escX
300:
310DEF PROCnew
320PRINTTAB(0,1)"New file"
330PROCname
340topX=TOP+2
350PROCmenu2
360:
370DEF PROCold
380PRINTTAB(0,1)"Old file"
390PROCname
400topX=TOP+2
410VDU28,0,24,39,11,12

420OSCLI"LOAD"+CHR$32+fil$+CHR$32+STR$
TOP
430topX=TOP+(!TOP AND &FFFF)
440PROCmenu2
450:
460DEF PROCsave
470PROCcls(11)
480lenX=topX-TOP
490?TOP=lenX:?(TOP+1)=lenX DIV&100
500?TX=FNcfs

510OSCLI"SAVE"+CHR$32+fil$+CHR$32+STR$
TOP+CHR$32+STR$topX
520?TX=0
530IF FNcfs
VDU28,0,24,39,11,12:PRINT"Rewind, Press
Play to
Verify":OSCLI"LOAD"+CHR$32+fil$+CHR$32+
"8000"
540ENDPROC
550:
560DEF PROCname
570REPEAT
580PROCcls(11)

590fil$=FNinput("Filename:",10,11,33,12
6,7-3*FNcfs)
600UNTIL fil$>"
610PRINTTAB(29,1)SPC10;TAB(29,1)fil$
620ENDPROC
630:
640DEF PROCmenu2
650foundX=FALSE
660ON ERROR PROCerr(1)
670REPEAT
680PROCcls(3)
690!PX=&1114
```

Turn to Page 28 ►



# ◀ From Page 27

```

700optX=FNmenu(11,11,3,2)
710ON ERROR PROCerr(2)
720IF optX=0 PROCentry
730IF optX=1 PROCprefix
740IF optX=2 PROCsearch
750UNTIL escX
760:
770DEF PROCentry
780!PX=81150
790entX=topX
800REPEAT
810topX=entX
820PRINTTAB(0,3)"New
entry"TAB(29,3)"Free:"STR$(LOMEM-
topX)SPC1
830PROCcls(11)
840PROCheads(4)
850PRINTTAB(0,24)"(Press Escape when
finished)";
860RESTORE 3540
870FOR vposX=11 TO 19 STEP2
880$buf2X=""
890IF vposX=11 $buf2X=mag$
900IF vposX=13 $buf2X=dat$
910PROCstore
920NEXT
930UNTIL escX
940:
950DEF PROCheads(NX)
960PRINTTAB(0,10)
970RESTORE 3530
980FOR IX=0 TO NX
990READ h$:PRINT h$
1000NEXT
1010ENDPROC
1020:
1030DEF PROCstore
1040READ lenX
1050IF $buf2X=""
$buf2X=FNinput("",10,vposX,32,126,lenX)
ELSE PRINTTAB(10,vposX)$buf2X
1060PROCpack($buf2X,$buf1X,1)
1070ent_lenX=?877+?878
1080IF (entX+ent_lenX)>LOMEM
PROCno_room:FX125
1090entX=entX+ent_lenX
1100PROCmove($buf1X+ent_lenX-1,entX-
1,$buf1X,-1)
1110ENDPROC
1120:
1130DEF PROCprefix
1140PROCcls(3):PRINT"Prefix"
1150PROCheads(1)
1160mag$=FNinput("",10,11,32,126,15)
1170dat$=FNinput("",10,13,32,126,8)
1180*FX125
1190:
1200DEF PROCsearch
1210PROCcls(3)
1220!PX=81150
1230PRINT"Search"
1240PRINTTAB(0,11)"Printout?(Y/N)";
1250printX=(GET OR 32)=ASC"y"
1260PROCcls(11)
1270IF printX PROCprinter
1280$str1X=FNinput("Item
One:",10,11,32,126,17)
1290PRINTTAB(6,3)"...."+CHR$34+$str1X+CHR$34
1300$str2X=FNinput("Item
Two:",10,13,32,126,17)
1310:
1320PROCcls(11)
1330PRINTTAB(10,5)CHR$34+$str2X+CHR$34
1340PROCcase($str1X,$str1X)
1350PROCcase($str2X,$str2X)
1360botX=TOP+2
1370RX=0
1380VDU23,1,0;0;0;0;
1390amendX=FALSE
1400REPEAT

```

```

1410IF botX=topX PROCout
1420PRINTTAB(29,3)"Record:";RX:RX=RX+1
1430old_botX=botX
1440IF FNinstr OR amendX
amendX=FALSE:PROCrecord:foundX=TRUE
1450UNTIL escX
1460:
1470DEF PROCprinter
1480PRINTTAB(29,3);
1490*FX15,0
1500*FX3,8
1510AX=ADVAL(-4)
1520PRINT"Printout";
1530TIME=0:REPEAT UNTIL TIME>100
1540IF ADVAL(-4)<>AX
printX=0:PRINTTAB(29,3)STRING$(8,"?")
1550*FX3,0
1560*FX15,0
1570ENDPROC
1580:
1590DEF FNinstr
1600LOCAL foundX
1610FOR IX=0 TO 4
1620PROCpack(botX,$str3X,0)
1630PROCcase($str3X,$str3X)
1640IF INSTR($str3X,$str1X)
foundX=foundX OR 1
1650IF INSTR($str3X,$str2X)
foundX=foundX OR 2
1660botX=botX+?877+?878
1670NEXT
1680=foundX=3
1690:
1700DEF PROCrecord
1710*FX21,0
1720PROCcls(11)
1730IF printX:*FX3,8
1740RESTORE 3530
1750fieldX=old_botX
1760FOR IX=0 TO 4
1770PROCpack(fieldX,$buf1X,0)
1780READ h$:PRINT h$:SPC1;$buf1X
1790fieldX=fieldX+?877+?878
1800NEXT
1810*FX3,0
1820PRINTTAB(0,24)"(Ret:Next
Copy:Amend CTRL+Del:Delete)";
1830:
1840REPEAT
1850GX=GET
1860IF INKEY-2 AND GX=127
GX=255:PROCwipe
1870IF GX=135 PROCamend
1880UNTIL GX=13 OR GX=135 OR GX=255
1890PROCret
1900ENDPROC
1910:
1920DEF PROCwipe
1930!PX=81154
1940REPEAT UNTIL NOT (INKEY-2 OR
INKEY-90)
1950RESTORE 3540
1960FOR vposX=11 TO 19 STEP2
1970READ lenX
1980PRINTTAB(10,vposX)STRING$(lenX,CHR$
130)
1990NEXT
2000PROCmove(botX,old_botX,topX,0)
2010topX=topX-botX+old_botX
2020botX=old_botX
2030!PX=81510
2040ENDPROC
2050:
2060DEF PROCout
2070PRINTTAB(39,24)STRING$(39,CHR$127);
2080IF foundX PRINT "No more...";ELSE
PRINT "No match...";
2090PRINT"Press Escape";
2100REPEAT UNTIL escX
2110:
2120DEF PROCamend
2130amendX=TRUE

```

```

2140botX=old_botX
2150fieldX=old_botX
2160PROCcls(23)
2170PRINTTAB(0,9)"Amending..."
2180optX=FNmenu(0,11,5,3)
2190RESTORE 3540
2200FOR IX=0 TO optX
2210READ lenX
2220PROCpack(fieldX,$buf1X,0)
2230old_lenX=?877+?878
2240IF IX<optX fieldX=fieldX+old_lenX
2250NEXT
2260$str3X=FNinput("",10,11+optX*2,32,1
26,lenX)
2270VDU23,1,0;0;0;0;
2280:
2290PROCpack($str3X,$buf1X,1)
2300new_lenX=?877+?878
2310:
2320dlenX=new_lenX-old_lenX
2330IF (topX+dlenX)>LOMEM
PROCno_room:ENDPROC
2340IF dlenX>0
PROCmove(topX,topX+dlenX,fieldX,-1)
2350IF dlenX<0
PROCmove(fieldX+old_lenX,fieldX+new_len
X,topX,0)
2360PROCmove($buf1X+new_lenX-
1,fieldX+new_lenX-1,$buf1X,-1)
2370topX=topX+dlenX
2380RX=RX-1
2390PRINTTAB(0,9)SPC11
2400ENDPROC
2410:
2420DEF PROCno_room
2430PROCcls(11)
2440PRINT"No room...Press Return"
2450REPEAT UNTIL GET=13:PROCret
2460ENDPROC
2470:
2480DEF PROCmove(fromX,toX,untilX,upX)
2490!870=fromX:!872=toX:!874=untilX
2500IF upX CALL UX ELSE CALL DX
2510ENDPROC
2520:
2530DEF PROCpack(fromX,toX,CX)
2540!870=fromX:!872=toX:CALL SX
2550ENDPROC
2560:
2570DEF PROCcase(fromX,toX)
2580!870=fromX:!872=toX:CALL KX
2590ENDPROC
2600:
2610DEF FNmenu(posX,vposX,itemsX,setX)
2620VDU23,1,0;0;0;0;
2630PRINTTAB(2,24)"(Select with
SPACEBAR, then RETURN)";
2640PROCrestore
2650FOR optX=0 TO itemsX-2
2660READ opt$
2670PRINTTAB(posX,vposX+optX*2)opt$
2680NEXT
2690READ opt$
2700PROCchilite
2710REPEAT
2720IF GET=32 PROCchilite
2730UNTIL INKEY-74
2740PROCret
2750VDU23,1,1;0;0;0;
2760=optX
2770:
2780DEF PROCchilite
2790PRINTTAB(posX,vposX+optX*2)opt$
2800optX=(optX+1)MODitemsX
2810IF optX=0 PROCrestore
2820COLOUR0:COLOUR129
2830READ opt$
2840PRINTTAB(posX,vposX+optX*2)opt$
2850COLOUR1:COLOUR128
2860ENDPROC
2870:
2880DEF
FNinput(prompt$,posX,vposX,asc_minX,asc

```



```

_maxX, len_maxX)
2890LOCAL lenX

2900PRINTTAB(posX, vposX)STRING$(len_max
X, CHR$(130)); " ] TAB(posX-LENprompt$-
1, vposX)prompt$+"[";
2910REPEAT
2920?(buf1X+lenX)=13
2930GX=GET
2940IF GX=127 PROCdel
2950IF GX=21 REPEAT PROCdel:UNTIL
lenX=0
2960IF GX>=asc_minX AND GX<=asc_maxX
AND lenX<len_maxX THEN
?(buf1X+lenX)=6X:lenX=lenX+1:VDUGX;
2970UNTIL GX=13
2980PROCret
2990=$buf1X
3000:
3010DEF PROCdel
3020IF lenX>0 VDU8,130,8:lenX=lenX-
1:?(buf1X+lenX)=13
3030ENDPROC
3040:
3050DEF PROCret
3060REPEAT UNTIL NOT INKEY-74:*FX21,0
3070ENDPROC
3080:
3090DEF PROCerr(levelX)
3100COLOUR1:COLOUR128
3110?TX=0
3120*FX3,0
3130IF ERR<>17 PROCreport
3140IF ERR=17 AND INKEY-2 PROCreport
3150IF levelX=1 PROCmenu1
3160IF levelX=2 PROCmenu2
3170:
3180PROCcls(3)
3190PRINTTAB(10,11)"Are you
sure?(Y/N)"
3200IF (GET OR 32)<>ASC"y" PROCmenu1
3210:
3220DEF PROCreport
3230ON ERROR OFF
3240*FX4,0
3250*FX13,5
3260*FX225,1
3270VDU22,6
3280IF ERR=17 THEN LOWEN=TOP:END
3290REPORT
3300IF FNbasic2
PRINT":":$&700="LIST"+STR$ERL:$&710=$&
8AF6:$&718=$&80B4C:CALL 8710
3310PRINT" at line ";ERL
3320END
3330:
3340DEF FNbasic2
3350=?&8015=ASC"2"
3360:
3370DEF FNcfs
3380AX=0:YX=0
3390=(USR(&FFDA)AND&FF)=1
3400:
3410DEF PROCcls(tX)
3420VDU28,0,24,39,tX,12,26,31,0,tX
3430ENDPROC
3440:
3450DEF PROCrestore
3460RESTORE 3530
3470IF setX=1 RESTORE 3510
3480IF setX=2 RESTORE 3520
3490ENDPROC
3500:
3510DATA "Start New File...","Load Old
File...","Save.....","Rename..
.....","Restart....."
3520DATA "Make New Entry...","Set
Prefix.....","Search....."
3530DATA
"Magazine:","Date....:","Page....:","Ti
tle....:","Text....:"
3540DATA 15,8,4,29,149
3550:
3560DEF PROCinit
3570IF FALSE [(Compatibility with
Supercharger)
3580PROCassemble
3590CALL start_event
3600*FX4,1
3610*FX225,0
3620VDU23,128,24,60,60,126,126,0,126,60
,0
3630VDU23,129,255,0,255,0,255,0,255,0
3640VDU23,130,0,84,0,84,0,84,0,0
3650UX=move_up:DX=move_down:TX=tape:KX=
case:PX=palette2:SX=pack
3660REM extra line goes here
3670ENDPROC
3680:
3690DEF PROCfast_save
3700PROCassemble
3710?tape=-1
3720!palette1=&11101110
3730CALL start_event
3740OSCLI"SAVE"+CHR$32+"CEEMAGS"+CHR$32
+STR$PAGE+CHR$32+STR$TOP
3750*FX13,5
3760ENDPROC
3770:
3780DEF PROCshorten
3790RESTORE 3570
3800addX=!&1C AND &FFFF
3810!(addX-1)=&FF0DE105
3820?&12=(addX+3)MOD&100
3830?&13=(addX+3)DIV&100
3840RUN
3850:
3860DEF PROCassemble
3870*FX13,5
3880from=&70
3890to=&72
3900until=&74
3910ref_addr=&74
3920char_index=&76
3930nib_index=&77
3940nib_posn=&78
3950temp=&79
3960osbyte=&FFF4
3970osword=&FFF1
3980code=&900
3990:
4000FOR pass=0 TO 2 STEP2
4010PX=code
4020[OPT pass
4030.move_up
4040LDY #0
4050.loop
4060LDA (from),Y:STA (to),Y
4080LDA from:CMP until
4100BNE more
4110LDA from+1
4120CMP until+1
4130BEQ no_more
4140.more
4150DEC from
4160LDX from:CPX #&FF
4180BNE over
4190DEC from+1
4200.over
4210DEC to
4220LDX to:CPX #&FF
4240BNE loop
4250DEC to+1
4260BNE loop
4270.no_more
4280RTS
4290:
4300.move_down
4310LDY #0
4320.loop2
4330LDA (from),Y:STA (to),Y
4350LDA from:CMP until
4370BNE more2
4380LDA from+1
4390CMP until+1
4400BEQ no_more2
4410.more2
4420INC from
4430BNE over2
4440INC from+1
4450.over2
4460INC to
4470BNE loop2
4480INC to+1
4490BNE loop2
4500.no_more2
4510RTS
4520:
4530.case
4540LDY #0
4550.loop3
4560LDA (from),Y
4570CMP #ASC"A"
4580BCC not_capital
4590CMP #ASC"Z"+1
4600BCC not_capital
4610ORA #32
4620.not_capital
4630STA (to),Y
4640INY
4650CMP #&00
4660BNE loop3
4670RTS
4680:
4690.event
4700PHP:PHA
4710TXA:PHA:TYA:PHA
4730:
4740LDA tape
4750BEQ not_cfs
4760LDA #&B0
4770LDX #&FF
4780LDY #0
4790JSR osbyte
4800:
4810.not_cfs
4820INC col_index
4830LDA col_index
4840AND #1
4850BNE col2
4860LDA #&97
4870LDX #8
4880LDY palette1
4890JSR osbyte
4900LDX #9
4910LDY palette1+1
4920JSR osbyte
4930JMP col1
4940:
4950.col2
4960LDA #&97
4970LDX #8
4980LDY palette2
4990JSR osbyte
5000LDX #9
5010LDY palette2+1
5020JSR osbyte
5030:
5040.col1
5050JSR set_time
5060PLA:TAY:PLA:TAX
5080PLA:PLP
5090RTS
5100:
5110.set_time
5120LDX #time MOD&100
5130LDY #time DIV&100
5140LDA #4
5150JMP osword
5160:
5170.start_event
5180LDX #event MOD&100
5190LDY #event DIV&100
5200SEI
5210STX &220:STY &221
5230CLI
5240LDA #&13
5250JSR osbyte
5260JSR set_time
5270LDA #&0E
5280LDX #5
5290JMP osbyte
5300:
5310.time
5320EQU0 &FFFFFFFF
5330EQU0 &FF
5340.tape EQU0 0
5360.col_index EQU0 0
5380.palette1 EQU0 &1514
5400.palette2 EQU0 &1150
5420
5430.pack
5440LDA #0
5450STA nib_index
5460STA nib_posn
5470STA char_index
5480BCS not_decompress
5490JMP decompress
5500:
5510.not_decompress
5520STA char_index
5530TAY
5540STA (to),Y
5550:
5560.compress
5570LDY char_index
5580LDA (from),Y
5590PHA
5600:
5610LDX #ref DIV&100
5620STX ref_addr+1
5630LDX #ref MOD&100
5640LDY #&0C
5650JSR instr
5660PL char_found
5670:
5680LDX #ref2 DIV&100
5690STX ref_addr+1
5700LDX #ref2 MOD&100
5710LDY #&3E
5720JSR instr
5730PL char_found
5740:
5750LDX #ref3 DIV&100
5760STX ref_addr+1
5770LDX #ref3 MOD&100
5780LDY #&16
5790JSR instr
5800:
5810.char_found
5820CPX #ref MOD&100
5830BNE not_commonest
5840TYA
5850JSR store_nibble
5860JMP end_chk
5870:
5880.not_commonest
5890CPX #ref2 MOD&100
5900BNE rare
5910TYA
5920PHA
5930LSR A:LSR A
5950LSR A:LSR A
5970CLC
5980ADC #&0C
5990JSR store_nibble
6000PLA
6010AND #&0F
6020JSR store_nibble
6030JMP end_chk
6040:
6050.rare
6060TYA:PHA:PHA
6090LDA #&0F
6100JSR store_nibble
6110PLA
6120LSR A:LSR A
6140LSR A:LSR A
6160CLC
6170ADC #&0E

```

Turn to Page 30 ►



# ◀ From Page 29

```

6180JSR store_nibble
6190PLA
6200AND #80F
6210JSR store_nibble
6220:
6230.end_chk
6240PLA
6250INC char_index
6260BEQ error
6270CMP #80D
6280BNE compress
6290RTS
6300:
6310.store_nibble
6320LDY nib_index
6330ORA (to),Y
6340STA (to),Y
6350LDA nib_posn
6360EOR #1
6370STA nib_posn
6380BNE high_nibble
6390INC nib_index
6400BEQ error
6410LDY nib_index
6420LDA #0
6430STA (to),Y
6440RTS
6450:
6460.high_nibble
6470LDA (to),Y
6480ASL A:ASL A
6500ASL A:ASL A
6520STA (to),Y

```

```

6530RTS
6540:
6550.instr
6560STX ref_addr
6570.loop
6580DEY
6590BMI out
6600CMP (ref_addr),Y
6610BNE loop
6620.out
6630RTS
6640:
6650.error
6660BRK:BRK
6680EQU$ "String"+CHR$7
6690BRK
6700:
6710.decompress
6720JSR read_nib
6730CMP #80C
6740BCS read_another
6750LDY #ref DIV&100
6760LDX #ref MOD&100
6770JSR store_byte
6780JMP end_chk2
6790:
6800.read_another
6810TAX
6820JSR read_nib
6830CMP #80E
6840BCC two_nib_char
6850CPX #80F
6860BEQ three_nib_char
6870:
6880.two_nib_char
6890STA temp

```

```

6900TXA
6910SEC
6920SBC #80C
6930ASL A:ASL A
6950ASL A:ASL A
6970CLC
6980ADC temp
6990LDY #ref2 DIV&100
7000LDX #ref2 MOD&100
7010JSR store_byte
7020JMP end_chk2
7030:
7040.three_nib_char
7050TAX
7060JSR read_nib
7070CPX #80F
7080BNE first_str
7090CLC
7100ADC #810
7110.first_str
7120LDY #ref3 DIV&100
7130LDX #ref3 MOD&100
7140JSR store_byte
7150:
7160.end_chk2
7170BEQ error
7180CMP #80D
7190BNE decompress
7200RTS
7210:
7220.store_byte
7230STY ref_addr+1
7240STX ref_addr
7250TAY
7260LDA (ref_addr),Y
7270LDY char_index

```

```

7280STA (to),Y
7290INC char_index
7300RTS
7310:
7320.read_nib
7330LDY nib_index
7340LDA (from),Y
7350TAY
7360LDA nib_posn
7370EOR #1
7380STA nib_posn
7390BEQ lo_nib
7400TYA
7410LSR A:LSR A
7430LSR A:LSR A
7450RTS
7460.lo_nib
7470INC nib_index
7480TYA
7490AND #80F
7500RTS
7510
7520.ref
7530EQU$ "etaoinshrdl"+CHR$32
7540.ref2
7550EQU$ "ubcfghjkmnpqvwxyzA"
7560EQU$ "BCDEFGHIJKLMNOPQ"
7570EQU$ "RSTUVWXYZ0123456"
7580EQU$ "789.,;'+CHR$34+'`()+~"+CHR$13
7590.ref3
7600EQU$ "$Z&<>@["+CHR$93+"'^{}~#!"
7610EQU$ "=/*?!\_"
7620J:NEXT:ENDPROC

```

electron  
user

**MAIL ORDER OFFERS**

electron  
user

**MAIL ORDER OFFERS**

**Solar powered,  
see through calculator.  
FREE with orders  
over £25\***

Using state-of-the-art technology this calculator has an invisible membrane keypad, runs from solar cells (so you'll never need any batteries), and because it's only the size of a credit card it fits easily in your wallet or pocket.

This exclusive limited edition calculator can be yours for just £7.95 – or we'll send you one **ABSOLUTELY FREE** with every order over £25!

\* UK orders only (not subscriptions). Subject to availability

**EXCLUSIVE**



**TO ORDER PLEASE USE THE FORM ON PAGE 45**



# SNAKES

# alive!

Improve your keyboard skills with this fun, yet educational game from Darren Bradley

**T**YPING tutors need not be dull, mind-numbing programs, as Stone the Snakes clearly demonstrates. It is designed to improve your knowledge of the Electron's keyboard, but the tutor takes the form of a simple, yet addictive game.

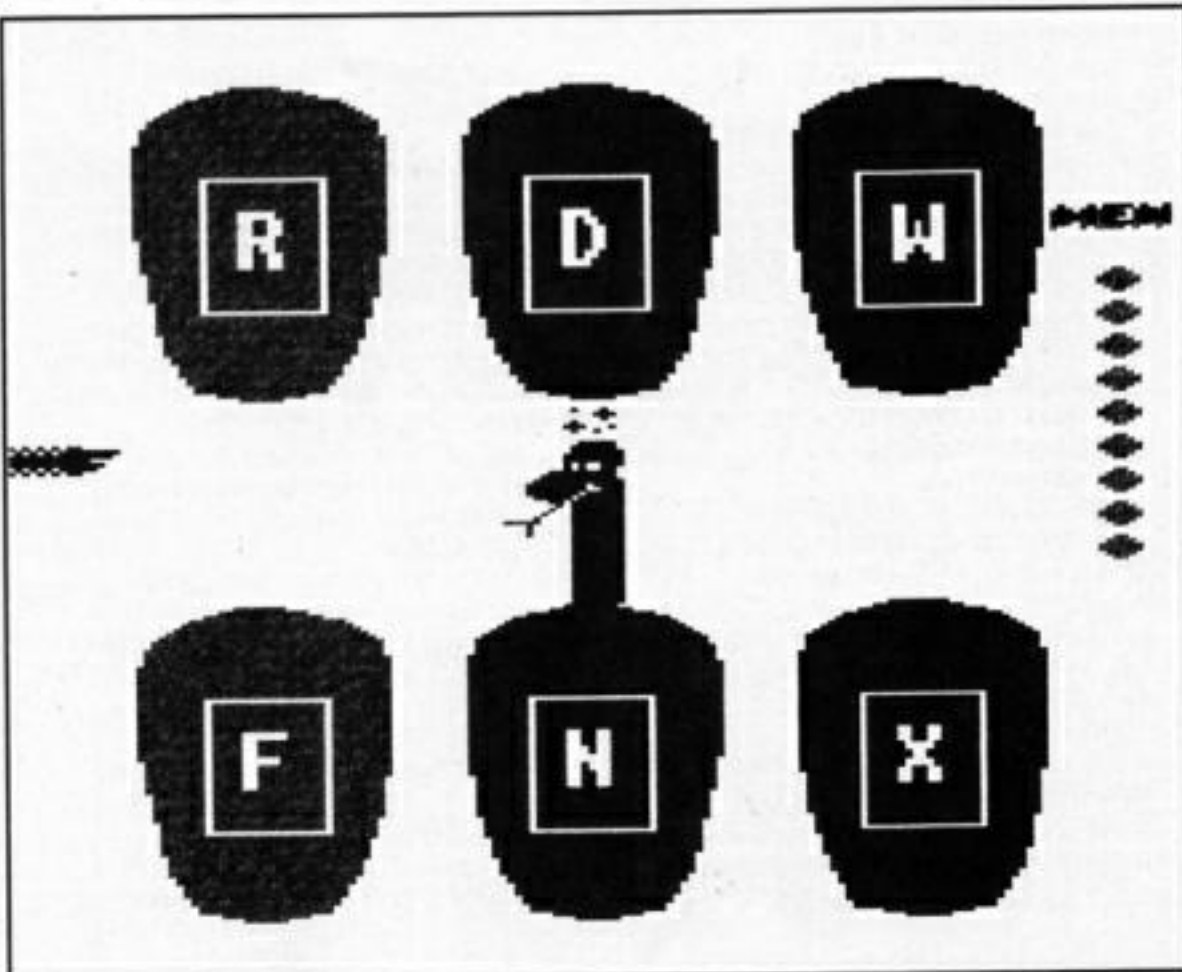
It is especially suitable for young children, helping them identify the most common keys while having lots of fun while they do so.

You are an Indian snake charmer's assistant and while he is at lunch your task is to watch his baskets, making sure the snakes don't escape. You sit beside the six baskets armed with a handful of pebbles.

Watch for any snake that pops its head out and when it does throw a pebble at it to make it jump back in. Each basket has a letter printed on the side – press that letter on the keyboard to throw a pebble.

If you are too slow the snake will put its tongue out, escape and bite you, costing you one of your lives. Throw at the wrong basket and the snake will again escape and bite you. Sometimes a snake will pop its tail out of its basket. Don't throw stones then as they bounce back and hit you.

There are five levels of difficulty, so no matter how good – or poor – your typing skills, you can still have a challenging game. If you complete a level you'll automatically move on to the next.



```
10 REM Snakes
20 REM By Darren Bradley
30 REM (c) Electron User
40 MODE4:VDU23;8202;0;0;0;ONE
RROR MODE6:PRINT:REPORT:PRINT" at
Line ";ERL:END
50 PROCins
60 MODE5:VDU23;8202;0;0;0;19,2
,2;0;19,3,3;0;:PROCch:PROCva:PROC
scr:PROClet:PROCupdate:PROCgame:R
UN
70 DEFPROCscr
80 MOVED,0:DRAW0,1023:DRAW1279
,1023:DRAW1279,0:DRAW0,0:VDU5:FOR
y=670TO170STEP-500:FORx=250TO950S
TEP350:PROCba(x,y,1+((x-250)/350)
):NEXT:NEXT:GCOL0,1:MOVE1127,700:
PRINTme$:GCOL0,3:MOVE1131,704:PRI
NTme$:PROCupdate:ENDPROC
90 DEFPROCba(x,y,z)
100 GCOL0,z:MOVEx,y:PLOT0,0,150
:PLOT81,50,0:MOVEx,y:PLOT81,110,1
40:PLOT81,40,-20:MOVEx,y:PLOT81,1
60,90:PLOT81,0,-70:MOVEx,y:PLOT81
,150,-40:PLOT81,-20,-60:MOVEx,y:P
LOT81,100,-140:PLOT81,-50,-10:MOV
Ex,y:PLOT81,10,-150
110 PLOT81,-50,10:MOVEx,y:PLOT8
1,-70,-100:PLOT81,-20,60:MOVEx,y:
PLOT81,-100,20:PLOT81,0,70:MOVEx,
y:PLOT81,-90,120:PLOT81,40,20:MOV
Ex,y:PLOT81,0,150:ENDPROC
120 DEFPROCch
130 VDU23,224,65,97,113,121,125
,121,113,97,23,225,62,30,14,6,2,6
,14,30,23,226,254,254,255,239,229
,217,177,97,23,227,0,0,0,0,2,6,14
,30,23,228,0,62,74,81,145,161,161
```

```
,162,23,229,0,0,52,46,110,94,6,4,
23,230,3,7,15,31,31,31,15,3
140 VDU23,231,131,135,143,159,1
43,135,131,129,23,232,124,120,112
,96,112,120,124,126,23,233,24,60,
24,0,60,126,60,0,23,234,60,126,60
,0,126,255,126,254,23,235,0,0,0,0
,0,0,0,1,23,236,255,255,255,255,2
55,255,255,255
150 VDU23,237,1,2,4,8,248,16,16
,16,23,238,0,170,85,255,255,255,8
5,170,23,239,0,192,128,0,0,0,128,
192,23,240,0,0,126,252,224,248,24
0,0,23,241,0,24,60,126,126,60,24,
0,23,242,0,68,14,4,64,226,72,0,23
,243,0,0,238,170,238,172,170,0
160 VDU23,244,0,0,106,138,174,1
70,74,0,23,245,0,0,160,160,160,0,
160,0,23,246,0,0,139,218,251,170,
139,0,23,247,0,0,210,26,158,22,21
0,0:ag$=CHR$18+CHR$0+CHR$3+CHR$24
3+CHR$244+CHR$245:me$=CHR$246+CHR
$247:g$=CHR$18+CHR$0+CHR$2
170 y$=CHR$18+CHR$0+CHR$3:c$=CH
R$8+CHR$10:sn$=g$+CHR$228+CHR$8+y
$+CHR$229+c$+CHR$8+g$+CHR$230+CHR
$226+CHR$8+y$+CHR$227+c$+g$+CHR$2
24+CHR$8+y$+CHR$225+c$+g$+CHR$224
+CHR$8+y$+CHR$225+c$+g$+CHR$224+C
HR$8+y$+CHR$225
180 del$=CHR$236+c$+CHR$8+CHR$2
36+CHR$236+c$+CHR$8+CHR$236+CHR$2
36+c$+CHR$236+c$+CHR$236:sn2$=y$+
CHR$233+c$+CHR$234+CHR$8+g$+CHR$2
35+c$+CHR$231+CHR$8+y$+CHR$232+c$
+g$+CHR$231+CHR$8+y$+CHR$232+c$+g
$+CHR$231+CHR$8+y$+CHR$232
190 ar$=g$+CHR$238+CHR$239+y$+C
```

Turn to Page 32 ▶



# Snakes alive!

```
HR$8+CHR$240:ts=CHR$18+CHR$0+CHR$
1+CHR$237:del2$=CHR$18+CHR$0+CHR$
0+CHR$236+CHR$236:ENVELOPE1,0,0,1
2,-12,7,7,7,126,0,0,-126,126,126:
DIMleX(5),coX(5,1):manX=10:ENDPRO
C
```

```
200 DEFPROCva:cX=0:goX=0
210 i=0:aX=RND(26)+64:FORnX=0TO
5:IFleX(nX)=aX i=1
220 NEXT:IFI=1 GOTO210
230 leX(eX)=aX:eX=eX+1:IFeX<6 6
OTO210
```

```
240 i=0:FORy=670TO170STEP-500:F
ORx=250TO950STEP350:coX(i,0)=x:co
X(i,1)=y:i=i+1:NEXT:NEXT:ENDPROC
250 DEFPROCbg(x,y,a$)
260 FORn=1TOLEN(a$):?870=ASC(MI
DS(a$,n,1)):AZ=&A:XZ=&X:YZ=&Y:CAL
L&FFF1:VDU23,254,?871,?871,?872,?
872,?873,?873,?874,?874,23,255,?8
75,?875,?876,?876,?877,?877,?878,
?878:MOVE(x-32)+(n*32),y:VDU254,8
,10,255:NEXT:ENDPROC
```

```
270 DEFPROClet
280 FORnX=0TO5:GCOLD,0:MOVEcoX(
nX,0)-34,coX(nX,1)+64:DRAWcoX(nX,
0)-34,coX(nX,1)-64:DRAWcoX(nX,0)+
94,coX(nX,1)-64:DRAWcoX(nX,0)+94,
coX(nX,1)+64:DRAWcoX(nX,0)-34,coX
(nX,1)+64:PROCbg(coX(nX,0)-2,coX(
nX,1)+32,CHR$leX(nX)):NEXT
```

```
290 ENDPROC
300 DEFPROCgame:REPEAT:a=RND(6)
:a=a-1:MOVEcoX(a,0),coX(a,1)+310:
b=RND(2):FORM=0TORND(3000):NEXT:1
Fb=1 PRINTsn$ ELSEPRINTsn$
310 SOUND1,-15,150,1:TIME=0:0
SCLI"FX21":AS="":REPEAT:AS=INKEY$
(0):UNTILAS<>"":ORTIME>SX:goX=goX
+1:IFAS<>"":PROCcheck ELSEPROCche
ck2
```

```
320 GCOLD,0:MOVEcoX(a,0),coX(
a,1)+310:PRINTdel$:PROCupdate:UNT
ILgoX=21 ORmanX=0:IfgoX=21 PROCne
w
```

```
330 PROCdead:ENDPROC
340 DEFPROCcheck:LOCALi:i=0:FOR
nX=0TO5:IFASC(AS)<>leX(a) i=1
```

```
350 NEXT:IFI=1 SOUND1,-15,30,
1:manX=manX-1:ENDPROC
```

```
360 e=coX(a,1)+310:MOVE8,e:PRIN
Tar$:g=104:MOVEg,e:GCOLD,1:VDU241
:REPEAT:MOVEg,e:VDU241:g=g+32:MOV
Eg,e:VDU241:UNTILg>coX(a,0)-32:M
OVEg,e:VDU241
```

```
370 IFb=2 SOUND1,-15,30,1:GCOLD
,1:MOVEg,e:VDU241:REPEAT:MOVEg,e:
VDU241:g=g-32:MOVEg,e:VDU241:UNT
ILg=104:MOVEg,e:VDU241:MOVE8,e:PRI
NTdel2$:MOVE16,e:PRINTag$:SOUND0,
```

```
1,20,8:FORn=0TO2500:NEXT:MOVE16,e
:PRINTdel2$:CHR$236:manX=manX-1:E
NDPROC
```

```
380 SOUND1,-15,200,1:MOVEcoX(a,
0)-64,coX(a,1)+246:PRINTt$:MOVEg+
16,e+32:GCOLD,2:VDU242:FORn=0TO20
00:NEXT:MOVE8,e:PRINTdel2$:MOVEg+
16,e+32:VDU242:ENDPROC
```

```
390 DEFPROCcheck2:IFb=1 MOVEcoX
(a,0)-64,coX(a,1)+246:PRINTt$:SOU
ND1,1,60,5:FORn=0TO1500:NEXT:manX
=manX-1:ENDPROC ELSEENDPROC
```

```
400 DEFPROCins:VDU19,0,4,0;19,1
,3,0;:RESTORE490:FORz=0TO27:READx
$:PRINT:PROCit(x$):NEXT:REPEATUNT
ILGET=32:CLS
```

```
410 PRINTTAB(0,2):PROCit("Enter
Skill Level <1-5>"):PRINT:PROCit
("(1-Easy 5-Hard)"):ZX=GET:ZX=ZX-
48:IFZX<1 ORZX>5 SOUND1,-15,150,1
:GOTO410
```

```
420 PRINT:PROCit(STR$(ZX)):SX=2
00-(ZX*25):FORn=0TO1000:NEXT:ENDP
ROC
```

```
430 DEFPROCnew
```

```
440 VDU4,12:IFZX=5 VDU17,2:PRIN
TTAB(5,2)"WELL DONE!"TAB(5,3)""
-----:COLOUR3:PRINTTAB(1,5)"Yo
u certainly have"TAB(2,6)"nimble
fingers!":COLOUR1:PRINTTAB(1,8)"P
ress <SPACE-BAR>"TAB(3,9)"to play
again":REPEATUNTILGET=32:RUN
```

```
450 VDU17,2:PRINTTAB(5,2)"WELL
DONE!"TAB(5,3)""-----:COLOUR
3:PRINTTAB(2,6)"Now try a faster"
TAB(8,7)"game":COLOUR1:PRINTTAB(1
,10)"Press <SPACE-BAR>"TAB(4,11)"
to continue!":ZX=ZX+1:SX=200-(ZX*
25):REPEATUNTILGET=32
```

```
460 VDU12,18,0,3:PROCva:PROCscr
:PROClet:PROCgame
```

```
470 CLS:GCOLD,3:PROCch:PROCscr:
PROClet:PROCgame
```

```
480 DEFPROCit(a$):FORn=1TOLENa$
:?870=ASC(MID$(a$,n,1)):AZ=&A:XZ=
&X:YZ=&Y:CALL&FFF1:VDU23,255,?871
/2,?872/2,?873,?874,?875,?876*2,?
877*2,?878*2:PRINTCHR$255;:NEXT:E
NDPROC
```

```
490 DATA"Stone the Snakes : By
```

Darren Bradley," -----

"-----", "This is a simple game designed to,"help you become more familiar with the,"computer keyboard. The idea is to"

500 DATA"hit the snakes on the head with stones.", " ", "To do this, simply press the key which," is displayed on the snake's basket.", " ", "If a tail appears, avoid it, as your,"stone will ricochet back, and kill you!", " "

510 DATA"You can also lose a life by:", " ", "i) Allowing the snake to remain out of," its basket for too long. If this," occurs, the snake will pull its," tongue out, and escape!", " ", "ii) By pressing the wrong key.", " "

520 DATA" There are five skill levels, the speed", "increasing in each one. If you survive", "twenty turns, you will automatically", "progress to the next, faster level.", " ", "Press <SPACE-BAR> to continue..."

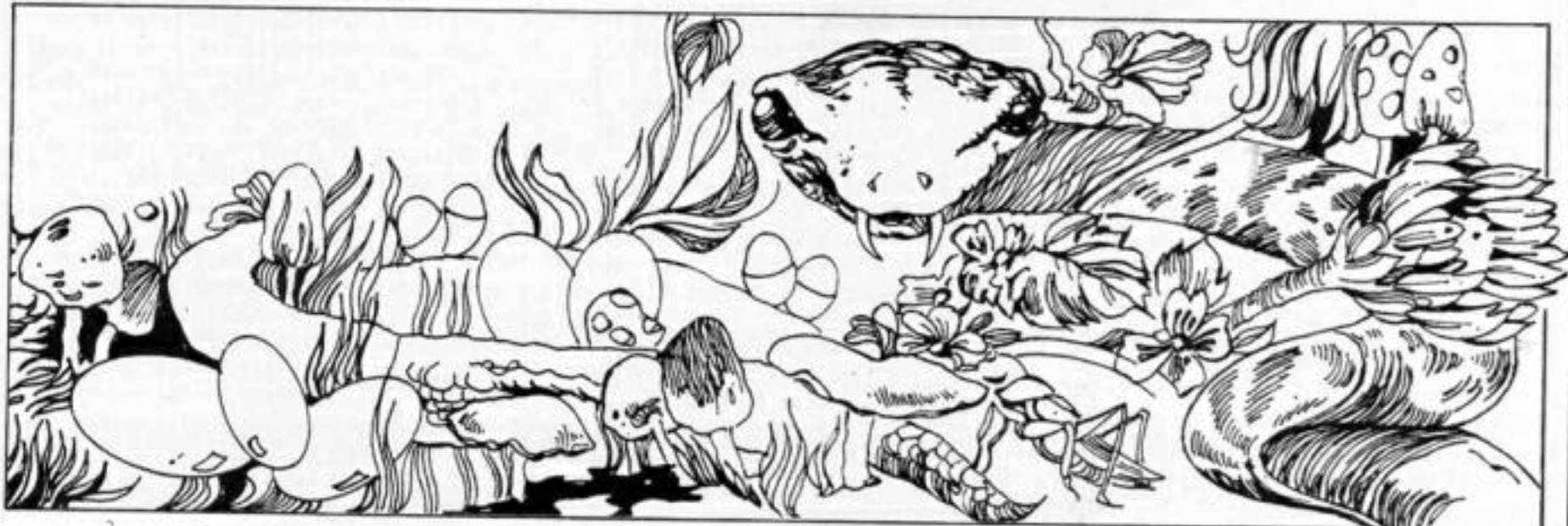
530 DATA"Please select your starting skill level", "(1-5) 1=Easy 5=Hard"

540 DEFPROCupdate:m\$=CHR\$18+CHR\$0+CHR\$1:s\$=CHR\$18+CHR\$0+CHR\$0:sX=10-manX:FORn=1TOsX:s\$=s\$+CHR\$236+CHR\$8+CHR\$10:NEXT:FORn=1TOmanX:m\$=m\$+CHR\$241+CHR\$8+CHR\$10:NEXT:m\$=m\$+s\$:MOVE1163,640:PRINTm\$:ENDPROC

550 DEFPROCdead

560 VDU12,17,2:PRINTTAB(5,2)"HARD LUCK!";TAB(5,3)""-----:COLOUR3:PRINTTAB(2,5)"The snakes have";TAB(0,6)"triumphed once more":COLOUR1:PRINTTAB(2,9)"Press <SPACE-BAR>";TAB(3,10)"to play again":MOVE608,528:VDU5:PRINTsn\$

570 REPEAT:AS=INKEY\$(0):MOVE544,464:PRINTt\$:SOUND1,1,60,5:FORn=0TO500:NEXT:GCOLD,0:MOVE544,464:VDU236:FORn=0TO1000:NEXT:UNTILAS="":RUN





**Send a stamped addressed envelope for your copy**

## FREE HELPSHEETS/MAPS

## FREE HELPSHEETS/MAPS

Spend over £4 on games and you may choose **ONE** of the following  
helpsheets/solutions and maps absolutely **FREE**.  
Spend over £10 and you may choose any **TWO FREE** :-

Pyramids	(p[re]gh[et] = 4 maps)	Encher 7	(S[ol]ut[io]n)	Hoverford	(P[ass]w[or]ds = 2 maps)
Village of Last Sorcs	(p[re]gh[et] = 4 maps)	Cale	(p[re]gh[et] = 4 maps)	Frost	(p[re]gh[et] = 4 maps)
Impact Jokers	(S[ol]ut[io]n = 1 map)	Tamarae	(S[ol]ut[io]n)	Thunderstruck 2	(S[ol]ut[io]n = 1 map)
Impact Jokers 2	(S[ol]ut[io]n = 1 map)	The Hiddler	(S[ol]ut[io]n)	Kawthorpe	(p[re]gh[et] = 4 maps)
Shark	(S[ol]ut[io]n = 1 map)	Pier 52	(S[ol]ut[io]n = 1 map)	Dunlop	(p[re]gh[et] = 25 maps)
Severid	(S[ol]ut[io]n = 1 map)	Pier 52	(S[ol]ut[io]n = 1 map)	Gibbines Castle	(S[ol]ut[io]n = 1 map)
Pach	(S[ol]ut[io]n = 1 map)	Say We Say	(p[re]gh[et] = 4 maps)	Palace of Magic	(S[ol]ut[io]n = 1 map)
Plan 5	(p[re]gh[et] = 4 maps)	Spindler	(S[ol]ut[io]n = 1 map)	Impact	(p[re]gh[et] = 1 passwords)
Strikers Run	(S[ol]ut[io]n = 1 map)	Eric	(S[ol]ut[io]n = 1 map)	Island	(p[re]gh[et] = 1 map)
Fuzzy	(S[ol]ut[io]n = 1 map)	Peabody	(p[re]gh[et] = 4 maps)	Spring Adventure	(p[re]gh[et] = 1 map)
Love Struck	(S[ol]ut[io]n = 1 map)	Yach Ki	(S[ol]ut[io]n = 1 map)	Anarchy Zone	(p[re]gh[et] = 1 passwords)
Amulet	(S[ol]ut[io]n = 1 map)	Omega City	(S[ol]ut[io]n = 1 map)	Region 2	(p[re]gh[et] = 18 maps)
Return of 92	(Map = 1 map)	Life	(p[re]gh[et] = 1 map)	Schneicher	(All passwords = 1 map)
Big Eyes 2	(S[ol]ut[io]n)	Tarzan	(S[ol]ut[io]n = 1 map)	Smush	(p[re]gh[et] = 1 map)
Myron	(S[ol]ut[io]n)	Stranded	(S[ol]ut[io]n)	Chet	(S[ol]ut[io]n)
The Last Crystal	(S[ol]ut[io]n = 18 maps)	Calderone, David	(S[ol]ut[io]n = 1 map)	Quest for Freedom	(S[ol]ut[io]n = 1 map)
Quest	(S[ol]ut[io]n = 1 map)	Thunderstruck	(S[ol]ut[io]n = 1 map)	Keyhole	(S[ol]ut[io]n)
Nautilus	(S[ol]ut[io]n = 4 maps)	Such	(S[ol]ut[io]n)	Stomache	(p[re]gh[et] = 1 map)
Lost of the Free	(S[ol]ut[io]n = 1 map)	Philosopher's Quest	(S[ol]ut[io]n = 1 map)	Rock Hammer 2	(S[ol]ut[io]n)
Standoff	(p[re]gh[et] = 1 map)	Rick Hansen	(S[ol]ut[io]n)	The Hunt	(S[ol]ut[io]n)
Compulsion	(S[ol]ut[io]n)	Thrust	(p[re]gh[et] = 1 map)	Salve Wulf	(p[re]gh[et] = 1 map)
Outgun Decade	(S[ol]ut[io]n = 1 map)	Last King	(S[ol]ut[io]n = 1 map)		
		Sole	(p[re]gh[et] = 1 map)		
			(p[re]gh[et] = 1 map)		

**WHITE MAGIC** (The Fourth Dimension)

Following the immense success of *Holed Out*, The Fourth Dimension have now released a unique new fast-action arcade adventure called **WHITE MAGIC**. You can at any time transform into a Leprechaun, Enchanter, Titan or Warrior in order to use their much needed varied abilities. A sure-fire hit.

**BBC/Electron Cassette £9.95    BBC B/Master 5 1/4" Disc £12.95**  
**Enhanced Archimedes 3 1/2" Disc £19.95**

**ARCHIMEDES GAMES**

<b>White Magic</b> (The 4th Dimension)	19.95	<b>Word Up &amp; Word Down</b> (Gem)	16.95	<b>Freddy's Foily</b> (Minerva)	11.95
<b>Holed Out</b> (3D Golf)		<b>Pacmania</b> (Grandslam)	15.95	<b>Alerion</b> (Dabs Press)	12.95
(The 4th Dimension)	19.95	<b>Repton 3</b> (Superior)	15.45	<b>Terramex</b> (Grandslam)	15.95
<b>Holed Out Extra Courses Vol 1</b>	16.95	<b>Jet Fighter</b> (Minerva)	11.95	<b>Zarch</b> (Superior)	15.45
<b>Holed Out Extra Courses Vol 2</b>	16.95	<b>Corruption</b> (Rainbird)	19.95	<b>Hoverbod</b> (Minerva)	11.95
<b>Cheat It Again, Archie</b>		<b>Fish</b> (Rainbird)	19.95	<b>Missile Control</b> (Minerva)	11.95
(Impact Software)	9.95	<b>Fireball</b> (Godax)	15.95	<b>Thundermonk</b> (Minerva)	11.95
<b>Quazer</b> (Impact Software)	9.95	<b>Orion</b> (Minerva)	11.95	<b>Minotaur</b> (Minerva)	11.95
<b>Startrader</b> (Gem)	16.95	<b>3D Pool</b> (Firebird)	16.95	<b>Ibix the Viking</b> (Minerva)	16.95

## HOLED OUT EXTRA COURSES

Due to overwhelming public demand The 4th Dimension has now produced 2 volumes of extra courses for their superb 3D golf game Holed Out. Each volume contains 2 superbly designed brand new courses plus the original Holed Out program; therefore you do not need the original Holed Out in order to play them.

"I play golf and this game is the closest thing I've seen to the real game on a computer." *Archive*, June 1989  
 "I wouldn't have thought it possible to get a better simulation out of the boob." *BBC Accorn User*, June 1989.  
 "The 3D perspective graphics are stunning." *Electron User GOLDEN GAME* June 89  
 "Holed Out is great....The game plays very well and the graphics are superb." *Popular Computing Weekly*, March 1989  
 "The best golf simulation I've ever seen on any Accorn machine." *The Micro User*, June 1989  
 "The Electron version is brilliant - it's almost the same as playing at Gleneagles. Unreservedly recommended."  
*AA & Computing Game of the Month*, June 1989

Prices above and opposite

## ARCADE SOCCER (The Fourth Dimension)

A brilliant soccer game of the quality that only The Fourth Dimension could produce. Superb graphics, League System, throw-ins, corners, diving goalies, superfast action and much, much more. It's as near to the real thing as you can get. "HIGHLY RECOMMENDED". You can play against the computer or a friend.



**BBC/Electron Cassette £9.95 BBC B/Master 5 1/4" Disc £12.95**  
Enhanced Archimedes version will be available late October at £19.95



# The Art Studio

from Impact Software

An ingenious and comprehensive design program from Impact Software allowing you to create superb pictures and save them to cassette or disc. It features a host of easy to use commands such as Zoom, Paint, Fill, Copy etc, to help any budding artist. No roms, chips, mice or other add-ons are required. Just load and go! Keyboard or joystick controls. Works in modes 4 & 5. This must be the best value utility on the market today.

**Prices opposite**

## BUDGET TITLES

M = Master Compatible				M = Master Compatible				M = Master Compatible			
<b>IMPACT SOFTWARE</b> (Discs are BBC B & Master Compatible 40/80)				<b>ASL</b>				<b>EPIC SOFTWARE</b> The Last Crystal (BBC Only)			
The Art Studio M	9.95	12.95	14.95	Shock M	7.25	9.25		8.95	-		
Orbit M	4.95	5.95	6.95	Breakthrough M	4.95	7.95					
Clobber M	4.95	5.95	6.95	Impact M	7.25	9.25					
Tron M	4.95	5.95	6.95	Powerpack 2 (Elec Only)	3.95						
Chest 8 Again, Vol 1	2.99	4.99	-	Remotekit M	7.50	9.50					
Chest 8 Again, Vol 2	2.99	4.99	-	Thundertruck	4.95	-					
Chest 8 Again, Vol 3	2.99	4.99	-	Thundertruck 2	4.95	-					
	2.99	4.99	-	Sphere of Destiny M	5.95	9.50					
				Omega City M	-	5.95					
<b>THE FOURTH DIMENSION</b>				<b>BEAR JOLLY</b>				<b>ELK ADVENTURE CLUB</b> Sunshine Game			
Holed Out (30 Day) M	9.95	11.95	12.95	Five Star Games 1 (5 games)	3.99	-		3.95	-		
Holed Out Extra Courses Vol 1 M	9.95	11.95	12.95	Five Star Games 2 (5 games)	3.99	-		3.95	-		
Holed Out Extra Courses Vol 2 M	9.95	11.95	12.95	Five Star Games 3 (7 games)	7.25	-					
White Magic M	9.95	12.95	13.95	Computer Hit 2 (BBC Only)	3.99	-					
ArCADE Soccer M	9.95	12.95	13.95	(10 games)							
				Com Hits 3 (10 games) (Elec Only)	4.95	-					
				Computer Hits 4 (10 games)	7.25	-					
				Computer Hits 5 (5 games)	3.99	-					
<b>SUPERIOR</b>				<b>BUGGYTIE</b>				<b>EXCLUSIVE GRAPHICS</b> Kinkadee (BBC Only) M			
Question of Sport M	9.50	11.50	15.70	Suphyle Camp 1 (4 games) M	-	4.99		6.95	8.95		
Play It Again Sam 6 M	6.95	-	11.25	Suphyle Camp 2 (4 games)	-	4.99					
Last Nexus M (BBC Only)	-	-	11.50	Turnpike M	2.99	-					
Play It Again Sam 5 M	6.95	8.95	11.25								
By Your Means or Foul M	7.25	9.50	11.50	<b>ICE</b>							
Play It Again Sam 4 M	6.95	8.95	11.25	Ice Attack M	9.95	11.95					
Pipeline M	7.25	9.50	11.50	Football Director M (BBC Only)	7.50	10.95					
Reason Thru Time M	6.95	8.95	11.25	Colossus Bridge M	10.95	12.95					
The Life of Reason M	5.50	-	7.50	Colossus Chess M	7.50	12.95					
Utopia M	6.90	-	9.95	Steve Davis Snooker M	1.99	4.99					
Region Around the World M	5.50	-	7.50	Brain Cough Football M	5.95	7.95					
Quest M	6.90	-	-	<b>DATABASE SOFTWARE</b>							
Elite M	9.45	11.45	15.75	Mini Office	4.95	-					
Armstrong Hills 1 M (BBC Only)	3.99	-	11.50	Starquake (BBC Only) M	7.50	9.50					
Armstrong Hills 2 M	2.99	-	11.50	Mini Office 2 (BBC B Only)	12.95	14.95					
				Mini Office 2 (Master Disc)	-	15.95					
<b>TYPESET</b>				<b>Fun School - 2 M</b>				<b>MONOPOLY</b> Monopoly (BBC Only)			
Superman M	5.90	10.95	-	Under 6's M	7.50	9.95					
Circus Games M	5.90	10.95	-	It's 8 Years M	7.50	9.95					
Summer Olympiad M	5.90	11.25	11.25	Over 8's M	7.50	9.95					
Gargoyles M	7.25	-	-	<b>DOCTORSOFT</b>							
Spies vs Spies M	7.25	-	-	Phantom Combat M	2.99	4.99					
Indoor Sports M	7.50	11.95	-	<b>DOMARE</b>							
Future Shock M	-	11.95	11.95	Empire Strikes Back (BBC Only) M	6.90	9.70					
				Not a Penny More (BBC Only) M	6.95	9.95					
				Star Wars M	6.90	9.70					
<b>GOOGLES</b>				<b>Return of the Jedi (BBC Only) M</b>				<b>ROBICO</b>			
Scramble M	4.95	6.95	6.95	Treasure Pottery (All BBC Only)	12.50	15.70					
Kaizyland M	5.95	6.95	6.95	Genius Edition M	12.95	16.95					
				Billy Snooker M	7.50	-					
<b>A-Z-F</b>				<b>Bulls Eye (BBC Only)</b>				<b>U.S. GOLD</b>			
Chuckle Egg	3.99	-	-	Countdown (BBC Only)	7.50	-					
				Bookbusters (BBC Only)	7.50	10.95					
<b>ADORNMENT</b>				<b>ADORNMENT</b>				<b>WHITE PANTHER</b>			
ArCADe (BBC Only)	3.99	-	-								
Rev's & Rev's 4 Tracks (BBC B Only)	3.99	-	-								
Rev's (BBC Only)	-	6.95	-								

<b>ALL ONLY £1.99 EACH</b>	<b>ALL ONLY £2.99 EACH</b>	<b>ALL ONLY £2.99 EACH</b>
<p>           Alien Crushout (Elec Only)            Ascentary Zone            Bar Brawl            Bitching (Elec only)            Beaver (Elec only)            Chess (Elec only)            Creepy Cave            3D Doty            3D Maze (Elec only)            Darts            Deathstar            Flight Path 737 (Elec only)            Frankenstein 2000            Gnomes Castle            Golden Figurine            Golf            Graham Goodie Cricket (Elec only)            Grid Iron            Gunsmoke (Elec only)            Hyperdrive (Elec only)            Indoor Soccer (Elec only)            Invasion (Elec only)            Jigsaw (BBC only)            Joe Blade 1            Joe Blade 2            Last of the Free            Magic Mushrooms (BBC only)            Monkey Nuts            Moon Grease (BBC only)            Mr Wily            Nuts (BBC only)            Panic            Paws (Elec only)         </p>	<p>           Percy Penguin            Peter Scott Trilogy (BBC only)            Psychosine            Round Ones            Smash and Grab            Snapper (Elec only)            Snorkler (BBC only)            Soccer Zone            Starling Command (Elec only)            Steve Davis Snooker            Stormcycle            Stye            Superpel (Elec only)            Swamp            Tempest            Thai Boxing (Elec Only)            Triple Deckers 1 - 10 (1.99 each)            UK PM (Elec only)            Video Card Arcade            Wet Zone (Elec only)         </p>	<p>           Footballer of the Year            Franny (Elec only)            Galathea            Ghoulie (Elec Only)            Hopper (Elec only)            Hunkydory            Karate Combat            League Challenge            Megarock (BBC only)            Monsters (BBC only)            Mr Ex (BBC only)            Phantom Combat            Plan 9            Plan 82            Pro Golf            Ravenskull            Rapton            Rapton 2            Robots            Rocket Red (BBC only)            Sphinx Adventure (Elec only)            Squashball            Star Force Seven            Strykers Run            Survival            Synchro            Tennis            Thrust            Turf Farm            Twin Kingdom Valley            Unlame            Warehouse         </p>
<b>ALL ONLY £1.99 EACH</b>	<b>ALL ONLY £2.99 EACH</b>	<b>ALL ONLY £2.99 EACH</b>
<p>           Acornsoft Hits 2            Aerolians (Elec only)            Beachhead (BBC only)            Citadel            Commands            Cruise Rider            Cricket            Croaker            Dregma (BBC only)            Durguns            Fails in the Factory            Fails / Fruit Monsters (Elec only)            Football Manager         </p>	<p>           Footballer of the Year            Franny (Elec only)            Galathea            Ghoulie (Elec Only)            Hopper (Elec only)            Hunkydory            Karate Combat            League Challenge            Megarock (BBC only)            Monsters (BBC only)            Mr Ex (BBC only)            Phantom Combat            Plan 9            Plan 82            Pro Golf            Ravenskull            Rapton            Rapton 2            Robots            Rocket Red (BBC only)            Sphinx Adventure (Elec only)            Squashball            Star Force Seven            Strykers Run            Survival            Synchro            Tennis            Thrust            Turf Farm            Twin Kingdom Valley            Unlame            Warehouse         </p>	<p>           Footballer of the Year            Franny (Elec only)            Galathea            Ghoulie (Elec Only)            Hopper (Elec only)            Hunkydory            Karate Combat            League Challenge            Megarock (BBC only)            Monsters (BBC only)            Mr Ex (BBC only)            Phantom Combat            Plan 9            Plan 82            Pro Golf            Ravenskull            Rapton            Rapton 2            Robots            Rocket Red (BBC only)            Sphinx Adventure (Elec only)            Squashball            Star Force Seven            Strykers Run            Survival            Synchro            Tennis            Thrust            Turf Farm            Twin Kingdom Valley            Unlame            Warehouse         </p>

## IMPACT NEWSLINE

For the very latest news ring: 0898 654334

25p per minute cheap rate; 38p all other times  
using your parents phone please ask for their permission first

Now updated every week, the newslines is a superb way of keeping up to date with the latest releases, games news, bargains and the top 5 best-selling games of the week.

**SIMPLY FILL IN THIS COUPON AND  
SEND A CHEQUE OR POSTAL ORDER  
TO IMPACT SOFTWARE.**

- All games despatched by 1st class post
- **FREE** postage and packing (U.K. only).
- Despatch normally same day as order.
- Minimum orders £3.00.
- Telephone orders welcome.

TELEPHONE ORDERS WELCOME



**IMPACT**  
Software

**(0742) 769950**  
Impact Software  
Neepsend House  
1 Percy St  
Sheffield S3 8AU

To: Impact Software, Neepsend House, 1 Percy St, Sheffield, S3 8AU  
Please send me the following :-

TITLE	FORMAT (Cassette etc.)	COMPUTER	PRICE
-------	---------------------------	----------	-------

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(We cannot accept orders for less than £3.00)

\* I enclose a cheque/P.O. or :

\* Debit my Access/Visa card account :

TOTAL COST..... £

--	--	--	--

--	--	--	--

--	--	--	--

--	--	--	--

(BLOCK CAPITALS PLEASE)

Name.....

Address .....

Postcode .....

Please send me **FREE** helpsheets/solutions/maps for the following games (from those above)

1 ..... (Orders over £4)  
2 ..... (Orders over £10)



Write your own arcade smashes using the

# ARCADE GAME Creator

Arcade Game Creator is a suite of programs for the Electron and BBC Micros. Taken from the pages of *Electron User*, it lets you into the secrets of writing fast-action arcade games, and provides you with a number of utilities to make design and programming easier.

Among the programs are:

- A Mode 5 sprite editor that lets you design your own multi-coloured characters.
- A selection of fast print routines that will move sprites both in front or behind other objects on the screen.
- Map generators that will squeeze a Mode 5 screen into 8 bytes!
- Scrolling maps.
- Score update and printing routines.
- ... and much, much more.

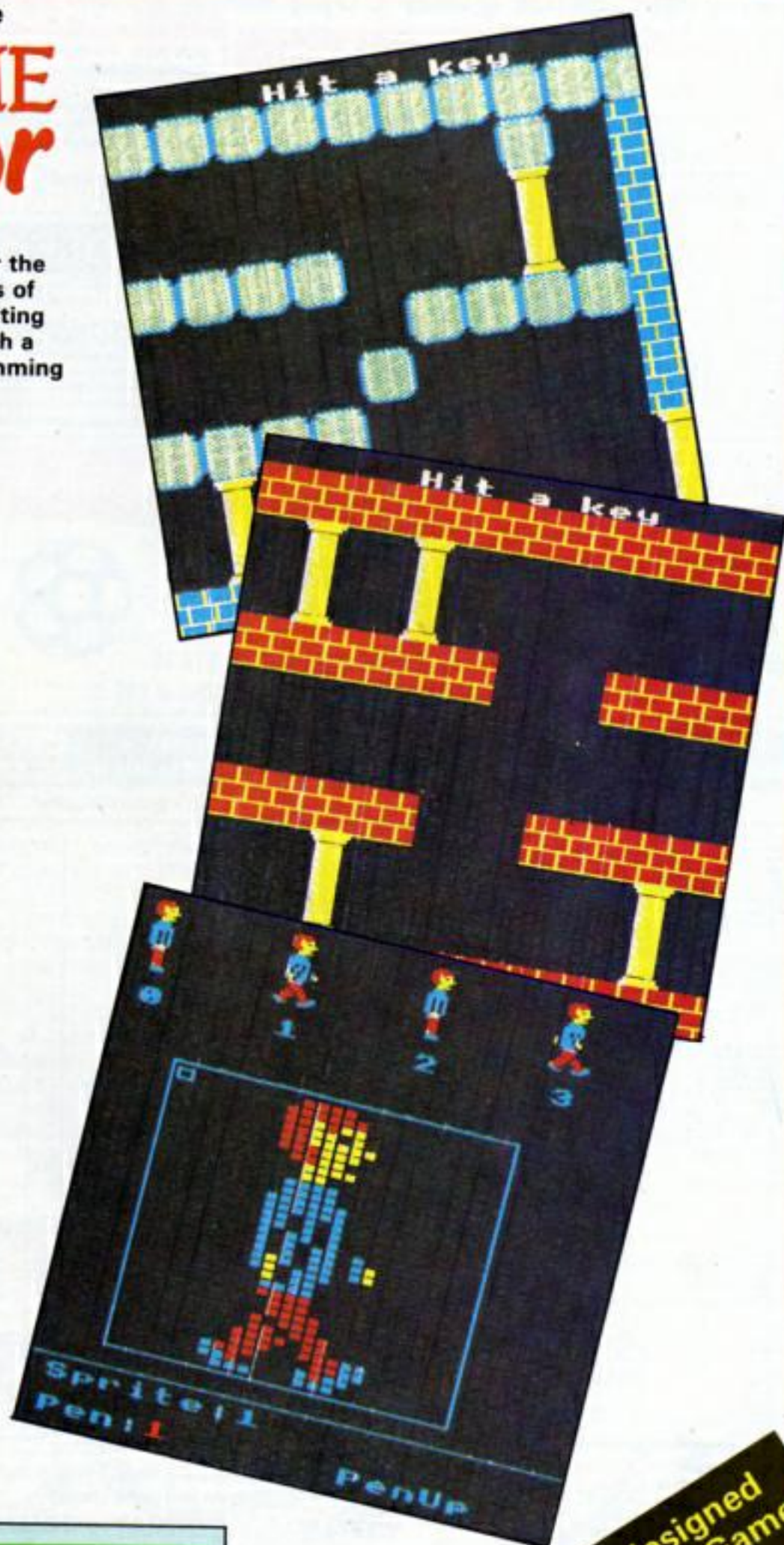
To help you make the most of the Arcade Game Creator, you will also get a comprehensive manual based on the original series.

Written in an easy to read style and with many illustrations and screen shots, it contains all the information you need to create and animate sprites, to design backgrounds and to link the two together into a complete arcade game.

If you are an aspiring games programmer, this is an offer you simply cannot afford to miss!

## Arcade Game Creator

Tape + manual .....£9.95



Screens designed  
using Arcade Game  
Creator

**TO ORDER PLEASE USE THE FORM ON PAGE 45**



# MICRO MESSAGES

## Expanding disc dilemma

I HAVE an Electron, Plus 1, ACP Plus 4, Turbo Board, Jafa Mode 7 adaptor, and a 5.25in 40/80 track disc drive. My problem is the ever occurring one of disc software for the Electron, or the lack of it. When Superior issued 5.25in DFS software of some of its catalogue I was very pleased, but it appears that the job was not done correctly.

The Play it Again Sam disc will not load or run correctly, in fact only Strykers Run will load and run. The Elixir disc will only run if the ADFS rom is present on the system and only then if the ADFS is on a lower priority than the DFS.

These problems as far as I am aware only exist on the ACP Plus 4 DFS discs. I notice that Impact Software is selling the Superior discs again. Are they upgraded versions? Can anyone assist me regarding the discs of Bonecruncher and Palace of Magic – do they run OK on the ACP Plus 4 system?

With the Mode 7 adaptor and Turbo board running the Electron is close to a BBC Micro and I believe you have a similar set up with the ACP Plus 4 in the office.

Is it possible for you to borrow the BBC Micro disc of the current game you are

reviewing from your sister magazine, The Micro User, and tell us disc users of which there are more than a few, if it will run on an expanded Electron?

I feel there is an untapped market for companies whose discs will run on Electrons which have been expanded. How about an article, I believe the Mirrorsoft titles run, but again which ones? I look forward to your comments. – J. Nunn, Hampton, Middlesex.

● From your letter it is clear you have quite a number of add-ons – DFS, ADFS, Plus 1, Turbo and Mode 7 boards. Any one of these could be causing compatibility problems with Superior's games.

We experienced problems a few months ago when programs would not correctly load with the Slogger Turbo. The solution was to load the loader and delete the line that tried to disable the Plus 1.

We like your idea of testing BBC Micro Software and will consider it for a future article. Pres is to produce around 50 Electron Superior Software titles on disc

convert between the two).

We don't know of anyone who is currently producing a serial port add-on for the Electron, so our advice would be to sell the HR5 and buy one with a parallel port.

Boots used to sell printer ribbons and thermal paper for Brother printers, so check with them for current availability.

You won't need a Watford DFS for the AP34 as it already comes with two disc filing systems, one of which is compatible with the Watford version.

Interword is not available for the Electron. View is the most commonly used word processor. The AP2 is a rom which plugs into the rom socket inside the AP1.

## ON ERROR RUN runs into trouble

I HAVE just received the July Electron User and tape. You have included my program Jetbike and I must point out that the printed version is bugged.

An ON ERROR RUN statement is used by the program to re-run and thereby reset the data once three lives are lost. Your version omits this statement, so once you have died the published program crashes. This can easily be remedied by adding the line:

55 ON ERROR RUN

I have added this line to your version and have had no problems after a number of plays. Alternatively, you can tag the ON ERROR RUN on to the end of line 50 or 60 as in the original copy I sent you. – L.C. Davies, Redditch, Worcs.

● Our apologies for that boob Lyn. The line was taken out to aid testing and debugging for anyone typing it in.

## More disc games wanted

RECENTLY I upgraded my subscription to include the monthly tape and after initial problems in receiving it, I am now pleased to say it arrives every month, although a week later than in the shops. I find it excellent after I have converted the programs to disc.

Why are there only a handful of programs available on disc, especially 5.25in as used on the AP4? Are we likely to see Mini Office on disc, and what about 10 of the Best, Fun School and Nursery Rhymes?

Superior made a great mistake by only

Turn to Page 36 ►

## Locked in Ravenskull

WOULD some kind reader help a frustrated Electron grandad with Ravenskull? I can complete the first level, but not without losing a life. I always seem to get trapped in the gates when the doors lock. – R. Gerrard, Macclesfield, Cheshire.

● Maps of level one and two of Ravenskull were published in the September and December 1987 issues of Electron User. Can any readers provide other clues?

## Super sort of Superman

AFTER reading your review of Tynesoft's Superman in the May issue of Electron User I was rather disappointed. I wanted to buy the game, but I learnt it was necessary to reload every time you die, which is very frustrating.

However, after I phoned Tynesoft about this point it came to my attention that Superman is also available on 3.5in disc for the Electron costing £14.99, so frustration is

now cut to seconds.

I have bought the game and it's brilliant and very addictive, making it a must for disc users. – Christopher Illidge, Holmes Chapel, Cheshire.

## Brother's serial link

I HAVE owned an Acorn Electron for two years. My set-up is an Acorn data recorder, colour TV, Plus 1 and View. I have recently been given a Brother HR5 printer. What do I need to connect my new serial printer to my Acorn Plus 1, and where can I obtain both this and a ribbon cassette?

I will shortly be getting an AP34 disc interface and I would like to know if the Watford DFS for the BBC Micro can be fitted to the interface. Is Interword compatible with the Electron? One final question, how do I fit the AP2 to my AP1? – Dean Fountain, Plaistow, London.

● You've got a problem with the printer – the Plus 1 has a Centronics parallel port and the printer has a serial one, meaning they are incompatible (the HR5 is available with a suitable parallel port but you can't easily



## ◀ From Page 35

bringing out *Play it Again Sam 1* on disc. Had more of this series been converted I would probably have bought them. If you produce another guide to software and hardware please include the Plus 4 and Citizen 120D printer, and Pascal language. — John Ross, Edinburgh.

● Pres is to produce around 50 Superior Software games on disc — see this month's news page. Mini Office can be put on disc with Slogger's T2P3 rom and the BBC Micro disc version of Fun School 2 works providing you disable the Plus 1. It was reviewed in last month's issue of *Electron User*.

There are no plans to produce a disc version of Nursery Rhymes.

## Not a mouse in the place

I HAVE been a reader of *Electron User* for three years and I find it a great help and very enjoyable. I own an Electron and Plus 1 and have recently decided to upgrade it with a mouse.

Looking through past issues I noticed an advert for the AMX Mouse and Art Package. I would like to know if Advanced Computer Products is still selling it, and if so how much it costs? If not, are there any suitable alternatives? — Alan Stainer, Horsham, West Sussex.

● The AMX Mouse is no longer available for the Electron and there aren't any alternatives. Impact (0742 769950) is releasing an art package shortly which promises to be very good

## Home finance improvement

I WOULD like you to pass on to other readers a few alterations I have made to Julie Boswell's excellent Home Finance Manager program which appeared in the April issue of *Electron User*.

Firstly, I thought the numerical columns would be much neater and easier to understand if the decimal points were kept in line vertically. To do this, including for the print-out, the following lines have to be added and changed.

```
680 PRINT date$(i)TAB(6)detail
$(i)TAB(24)dc(i)TAB(32)balance(i)
755 GZ=&20207
790 PRINTTAB(D,4+i)date$(i)TAB
(6,4+i)detail$(i)TAB(24,4+i)dc(i);TA
B(32,4+i);
810 PRINTbalance(i)
```

As I usually make 30 or so transactions in a month, I would not be able to use the utility to verify a monthly bank statement, due to the limit of 20 transactions.

By adding and changing the following lines, a full screen can be saved under a chosen filename which could be the last entry date, such as 17FEB. The current file

All programs printed in this issue are exact reproductions of listings taken from running programs which have been thoroughly tested.

However, on the very rare occasions that mistakes may occur corrections will be published as a matter of urgency. Should you encounter error messages when you type in a program they will almost certainly be the result of your own typing mistakes.

Unfortunately we can no longer answer personal programming queries concerning these mistakes. Of course letters about suggested errors will be investigated without delay, but any replies found necessary will only appear in the mail pages.

could be saved each time under a name such as Latest to avoid confusion:

```
205 INPUT"Filename?"FLN$
230 file=OPENOUT FLN$
345 INPUT "Filename?"NMFL$
350 file=OPENIN NMFL$
```

I hope these alterations will make the utility much more usable to other readers. — A.R. Dunks, Portsmouth, Hants.

## Is Robocop on our trail?

PLEASE print my letter, as not many young readers get their letters printed in the magazine. I would like to know if Robocop will be coming out for the Electron.

When I went to W.H. Smith they only sold a few Electron games, yet they sold loads for the Commodore and other computers. Please tell me why they do this because it doesn't seem fair as I like buying games? — John Close (aged 9), Dalston, London.

● We haven't heard of any plans to convert Robocop to the Electron. Sales of software for the Electron is now predominantly mail order. We're not sure how this situation has arisen, but don't worry, there's still enough cheap software available to keep you going into the next decade.

## Appreciation society

I READ J. Darlington's letter in the July issue of *Electron User* with interest. I experienced the same problems with Mini Office and Around the World in 40 Screens — I have an AP3 with T2P3 chip.

The tape filing system is re-enabled after a game is loaded using the rom. If there isn't a way around this problem I suggest Slogger could change the programming of the chip and produce a new version which would keep the disc system enabled. If they could do this I'm sure it would be appreciated by many users.

I also support the idea that a classified advertisements section would be a useful addition to an otherwise excellent magazine. — Gary Rychter, Livingston, West Lothian.

● The ball's in Slogger's court. It's up to them to find a solution to the problem.

## Upgrading the monthly tape

WHAT a great invention the pre-recorded tape is. I received my first one with the July issue, so no more late nights for me trying to get things right! However, I can think of one more improvement which would be a great asset.

Can we have a copy program produced to allow a straight copy to disc, so we disc users don't have to keep waiting for the programs to load after the initial transfer? The program could either be published as a listing to make the lazy ones among us work just once or twice, or be included in each month's tape running from the title page. — Charles Ayres, Bromsgrove, Worcs.

● We published a tape to disc copier more than three years ago. However, for our more recent readers, here it is again:

```
10 REM PROGRAM 1
20 REM Tape -> Disc
30 MODE 6
40 VDU 28,0,24,39,15
50 HINEM=&72BB
60 *FX16
70 *TAPE
80 *LOAD "" 2000
90 AX=0
100 REPEAT
110 n$=n$+CHR$(AX?&3B2)
120 AX=AX+1
130 UNTIL AX=11 OR AX?&3B2=0
140 *ADFS
150 n$="SAVE "+n$+" 2000 "+STR
$(?&3C6*256+(?&3C8 AND &FFFF))+
"+STR$(?&3C2)+" "+STR$(?&3BE)
160 PRINT"";n$
170 OSCLI n$
180 CLEAR
190 GOTO 70
```

This version is for the ADFS and DFS users should replace line 140 with:

```
140 *DISC
```

## Leading question

I HAVE owned my Electron for four years, and for four years I've been able to load and save programs without any trouble. Recently, however, I've had trouble loading software from cassette.

The computer doesn't seem to be receiving any signals, as when I enter the command \*CAT nothing appears on screen. I have tried turning off my Plus 1, adjusting the volume, and cleaning the tape heads, but with no success.

The strange thing about all this is that I



can save programs without any trouble. Is it my Electron that is faulty, or just the cassette lead – seven pin DIN to three jack plugs? I would very much appreciate your help. – Pak Charoenkul, Chelsea, London.

● It sounds as if your cassette lead is faulty. If you are handy with a soldering iron try pulling the plugs apart at either end and checking for loose wires or cracked joints. However, cassette leads are so cheap that it's not worth getting it repaired. Buy a new one.

## Slogging away with Pres

I HAVE been a reader of Electron User for nearly five years and still wait eagerly for each new issue to appear on the shelves of my local newsagent. I own a 64k Electron, equipped with a Plus 3, Plus 1, Acorn data recorder, Olivetti ink jet printer and various cartridges.

Recently I decided to buy Slogger's joystick interface, but because I already had a Pres Plus 2 rom I decided to discard this and replace it with the Slogger expansion rom 2.0.

As I already own a 32k sideways ram cartridge, I copied the Pres rom using the Slogger rom 2.0 and they appear to be perfectly compatible. I can now format discs and use printer buffers within a few seconds of switching my computer on.

From my experiences it would be possible for R. Hand of Chatham to have both the Slogger and Pres roms in operation at the same time. I would, however, try it with the Slogger rom in place of the original Plus 1 rom first. This is how I presently operate my system. – Richard Taylor, Barry, South Glamorgan.

## Transformer faults

MY Electron's transformer has packed up and is apparently irreparable. I have made local inquiries but cannot trace a dealer prepared to service or supply me with a replacement. Please tell me where I can obtain a new transformer.

I also have a friend whose Electron has stopped working, and he wishes to know of a dealer, preferably in the Midlands, who can service his Electron. – Alan Petty, Sutton Coldfield.

● Try A1 Computer Services, 9 Paddock Mount, Dawley, Telford, Shropshire, or Gracar, Unit 6, Acacia Close, Leighton Buzzard.

## Space for a mistake

AS a retired senior citizen with an interest in computing, I acquired an Electron and with the help of your magazine articles set

## Creating screens causes a problem

I HAVE owned the Arcade Game Creator cassette for the Electron for some time, but as yet I haven't made a game because I have a problem creating screens. My query is, how do you create some more screens using the program 4\_PROG2? I haven't a clue what to change in the program so that it will print a third screen.

Could you please answer my question, as I can't wait to make a game? – J.P. Tansey, Worcester.

● Creating and displaying more screens is really quite simple. First you must design the screen like this:

```
1790 REM Screen 3
1800 DATA 1111111111
1810 DATA 1000000101
1820 DATA 1400000301
1830 DATA 1444000201
1840 DATA 1000000441
1850 DATA 1000440001
1860 DATA 4440000041
1870 DATA 0000000441
1880 DATA 0000004441
1890 DATA 1111111111
```

Type this in at the end of the listing. Each of the numbers corresponds to a particular building brick, so build your screen by num-

bers. This new screen must be stored in memory along with the others so alter the following lines:

```
1335 scr2=PX+100
1340 FOR KX=0 TO 2
```

The first line sets up the label scr2 to point to the position of the data in memory – every screen takes up 50 bytes so the third starts 100 bytes after the first. The second line is a loop which now reads screens zero to two – three screens. Place the label scr2 in the machine code table:

```
1005 EQUW scr2
```

The machine code is written so that it draws the screen number in A%. To draw screen three A% must be set to two – zero is the first screen, one is the second and two is the third. Change line 110 to read:

```
110 AX=(AX+1)MOD 3
```

You should now be able to run the program and it will correctly draw your new screen. As you can see, the process of creating screens isn't very difficult as the program is quite structured.

out to learn the rudiments.

Having now fitted a Plus 1 and a View rom cartridge I have saved my first letter on tape as outlined in the instruction book. I find that after clearing the memory I can't get back a copy of the letter named Letter 1 after typing NEW then changing to Mode 6 and entering READ LETTER 1. I always get the message Marker not set.

I have experimented with various commands to no avail, and I note that in the manual's section eight, Blocks and Markers, it states "Markers are cleared whenever text containing them is formatted, text is saved without markers". – B.D. Manterfield, Sheffield.

● The problem is the space you have put between the word Letter and the number 1 in the filename. The solution is to either remove the number one or the space when saving text files.

## Incompatible joystick

I HAVE a Commander 3 F-Byte joystick interface and I am very happy with it. The only problem is I also have a Plus 1. Every time I want to use my F-Byte I have to take off the Plus 1. This is annoying because I use my Plus 1 and View for word processing quite a lot. Is there any way I can prevent this?

Also, could you show a graphics dump

for a Panasonic KX-P1081 dot matrix printer please? – Robert Johnson (aged 11), Huntingdon, Cambridgeshire.

● There isn't a way round the joystick problem, apart from buying a new one compatible with the Plus 1. You'll find a multi-shade screen dump in last month's Micro Messages.

## A word for the Electron?

IS Speech available for the Electron, because if there is I would very much like to buy it. On Page 45 of the June issue there is an advert for it on the BBC Micro.

In the July issue someone was asking for a cheat for Bug Eyes II. Perhaps you could ask readers for a cheat for Elixir, as I am really stuck.

Finally, please would you give me some information on Mini Office, because it sounds excellent, but is it really as good as it sounds? – James Jagger, Welton, Lincoln.

● Speech is not available for the Electron, only the BBC Micro. Can any readers help with Elixir?

Mini Office is simply the best word processor, database, spreadsheet and graphics package at the price. More powerful programs are available, like View and Viewsheets, but they cost around four times as much.



# 10 LINERS

**T**HIS month's 10 Liners come from Robert Henderson of Liverpool. The first, Multi-demo, is a fascinating menu-driven program that produces some interesting and unique screen displays. It is a superb demonstration of how much can be achieved in just 10 lines of Basic.

Enter and run the listing then choose a menu option by typing in a number from 1 to 4. The first demonstration produces strange fuzzy waves running up the screen. The second is an example of multiple screen modes.

The third and fourth demonstrations produce dazzling displays of moving coloured backgrounds over which text and graphics are printed. You can only

```
1MODE6:VDU23,1,0;0;0;0;:7&D3=
255:PRINTTAB(9,8);"S E L E C T
D E M O":7&D3=0:PRINTTAB(9,10);
" 1 ... Screen bouncin'"TAB(9)"
2 ... Mixed mode":*KEY100LD|MRUN|
M
2PRINTTAB(9)" 3 ... Colour sc
roll 1"TAB(9)" 4 ... Colour scro
ll 2":INPUTTAB(9,16);"Well ";aZ:1
FaZ<1 OR aZ>4 THEN RUN
3FORoZ=0TO2 STEP2:PZ=8900:xZ=
PZ+5:COPToZ:SEI:LDA#FE07:AND#181:
LDX#3:JSRdelay:STA#FE07:LDA#FE07:
AND#172:LDX#2:JSRdelay:STA#FE07:N
OP:JMP8900:RTS
4.delay:DEY:BNEdelay:DEX:BNE
delay:RTS:.demo2:SEI:LDA#100:STA#
FE08:LDA#144:STA#FE09:NOP:NOP:NOP:
NOP:NOP:LDA#255:STA#FE08:LDA#24:
STA#FE09:NOP:LDX#4:.d:DEX:BNEd:JM
Pdmo2:J:NEXT
5ON aZ GOTO 6,7,8,9
6MODE3:VDU23,1,0;0;0;0;:FORna
```

```
meX=1 TO 120:PRINT " Electron Use
r 1989 ";:NEXT:CALL&900
7MODE0:VDU23,1,0;0;0;0;:7xZ=1
33:AS=STRING$(80,CHR$(32)):FORnameX
=1 TO 120:PRINT " Electron User 1
989 ";:NEXT:PRINTTAB(0,1);AS:TAB(
0,14);AS:TAB(0,18);AS::CALL&900
8MODE5:VDU23,1,0;0;0;0;:FORbX
=1TO100:GCOLD,RND(3):PLOT85,RND(1
278),RND(1024):NEXT:CALLdemo2
9MODE5:VDU23,1,0;0;0;0;:COLOU
R129:CLS:COLOUR3:PRINTTAB(1,4);"W
HAT ABOUT THIS ?":PRINT "" Some
text scrolls":COLOUR2:PRINTTAB(0
,12);"And some does not !!"
10GCOLD,0:MOVE0,500:MOVE1278,5
00:PLOT 85,0,400:PLOT85,1278,400:
PRINTTAB(0,21);:FORFX=1TO8:PRINT
" ELECTRON ";:NEXT:GCOLD,3:MOVE0,
100:MOVE1278,100:PLOT 85,0,200:PL
OT85,1278,200:PRINTTAB(6,31);"Fas
t eh ?":CALLdemo2
```

quit from each demonstration by hitting the Break key. This does no harm however – all it does is simply take you back to the menu. The effects are achieved

through the use of a machine code routine to poke a series of numeric values into the ULA chip's palette and mode registers.

## Long-life screens

Robert's second offering, Blackout, is a handy machine code utility which will extend the life of your monitor screen. Many people use their computers all day, and while this isn't harmful to the Electron, the picture being displayed on the TV or monitor often remains static for hours on end.

This may be the case if a fractal generating program is being run, or the micro is being used to monitor or control some external hardware. Sometimes, if this is done too often, a faint after-image can be burnt into the phosphor coating on the screen.

Blackout is a small interrupt driven machine code routine which monitors the keyboard, and if it isn't used for a specified length of time the screen display is turned black. You set the time delay when the program is run – just enter the number of minutes the Electron is to be left idle before the display is blanked.

The program is stored out of the way at &900. This area of memory isn't used by Basic so you can load and run Basic listings without worrying about memory clashes. A timer is initialised which is

```
1 REM Blackout By R.Henderson
2 MODE6:VDU23,1,0;0;0;0;:PRIN
TTAB(2,11);" Please enter amount
of time before ":INPUT TAB(5,13);
" the screen is blacked out: "tim
eX:IF timeX<1 OR timeX>255 RUN
3 CLS:PRINTTAB(2,12);" The sc
reen will be blanked every ":PRIN
T TAB(13,14);timeX;" minutes.":VD
U23,1,1;0;0;0;
4 pblock=&68:pblock=0:osword
=&FFF1:7&70=50:7&71=60:7&72=timeX
:7&73=7&72
5 FOR iX=0 TO 2 STEP 2:PZ=890
0:[ OPT iX:PHP:PHA:TXA:PHA:TYA:PH
A:LDA #EC:CMPI #80:BEQ test:.reset
LDA #60:STA #71:LDA #50:STA #70:
LDA #73:STA #72:LDA #74:CMPI #1:B
EQ colour:PLA:TAY:PLA:TAX:PLA:PLP
:RTS
6 .test LDA #ED:CMPI #80:BNE r
eset:DEC #70:BNE ret:LDA #50:STA
#70:DEC #71:BNE ret:LDA #60:STA #
```

```
71:DEC #72:BNE ret:JSR blackout:J
MP blk
7 .blackout LDA #0:STA pblock
+1:LDX #15:.loop STX #8E:STX pblo
ck:LDX #pblock MOD 256:LDY #pbloc
k DIV 256:LDA #11:JSR osword:LDA
pblock+1:LDX #8E:STA #75,X:DEX:BN
E loop:RTS
8 .blk LDX #15:.blank TXA:STA
pblock:LDA #0:STA pblock+1:STX #
8F:LDX #pblock MOD 256:LDY #pbloc
k DIV 256:LDA #12:JSR osword:LDX
#8F:DEX:BNE blank:LDA #1:STA #74:
JMP ret
9 .colour LDX #15:.restore TX
A:STA pblock:LDA #75,X:STA pblock
+1:STX #8F:LDX #pblock MOD 256:LD
Y #pblock DIV 256:LDA #12:JSR os
word:LDX #8F:DEX:BNE restore:LDA #
255:STA #74:.ret PLA:TAY:PLA:TAX:
PLA:PLP:RTS:J:NEXT
10 7&220=0:7&221=&9:*FX14,4
```

then incremented every time frame fly-back occurs – every fiftieth of a second. If a key is pressed it is reset to zero. However, if one isn't pressed and the timer reaches the set limit the screen is blanked.

The colour palette is read using osword 11 and saved to memory. The colours are then all set to black using

osword 12 – a fast version of VDU 19. The routine now waits for a keypress and then proceeds to restore the original colour palette.

While the screen is blanked the program continues to run, you just can't see what is on screen. You should tap any key if you desire to see what is on the screen.



# NEW! TEN of the BEST! EDUCATIONAL GAMES

Packed full of some of the best educational games from the pages of *Electron User*, the new Ten of the Best Educational Games is the ideal way for your children to learn about maths, spelling, anagrams, telling the time, general knowledge, and even the rudiments of running a business!

Specially compiled by the *Electron User* team to give a good grounding in all aspects of learning, and at the very special price of only £5.95 on tape, or £6.95 on 3.5in disc, this collection is a treat you and your children cannot afford to miss!

Give your children hours of fun, and help them to learn the easy way by ordering your copy today.

## THE PROGRAMS

**Company Count** – Work your way up through the company starting off as a messenger, and ending up as president!

**Hungry Harry** – Find out what it's like to be an assistant in a busy shop. Can you work out the correct change to give the customers?

**Lemonade Stall** – Try your hand at running a lemonade stall at a popular seaside resort.

**Dozer Disorder** – Fill in the

missing letters after they are bulldozed into a pit.

**Crocodile** – Unscramble the letters of a word before the crocodile gets you.

**Snail Trail** – See how good you are at general knowledge in this trivia quiz.

**Hiss** – Improve your spelling by guiding a snake round the garden eating up words in the right letter order.

**Maths Fun** – Test your powers of mental arithmetic.

**Odd One Out** – Pick the object that doesn't fit from the list of five.

**Yule Spell** – Guess the hidden word or you'll lose your Christmas presents!

**ONLY £5.95**

Order your copy today, using the form on Page 45





TEL: 0276 72046  
FAX: 0276 51427

Now available through PRES **Advanced Computer Products** range of software products

### ADVANCED CONTROL PANEL

(20) /M/B/E/C £30 ex VAT £34.50 inc VAT

ACP is a front end control panel language providing a sophisticated yet friendly interface between user and computer for access to Languages, MOS functions and the users own file utility etc. Main features include pull down windows, simple to change MOS configure, floating point calculator, file manager, SW ROM's facilities (16K EPROM & FULL MANUAL)

"It's very easy to create an entire customised front end for your own use." - *Acorn User, August 1987.*

"ACP is much better than any of the other front end systems I've seen." - *Acorn User, August 1987*

"I can recommend it to anyone who wants easy access to the Electron's functions." - *Electron User, August 1987.*

#### ACP's main features are:-

- \* Pull down windows operate throughout
- \* Floating point calculator
- \* Users can create their own windows
- \* File manager
- \* Simple to change MOS-s configure options
- \* Floating point calculator
- \* Easy entry to other languages

### ADVANCED ELECTRON DFS Egg

(14) /E+ASR/ £17.38 ex VAT £19.99 inc VAT

An alternative to the DFS on rom for Plus 3 and ABR users. This optional alternative DFS is designed for use in Side-ways RAM (ABR) and allows the user to operate a disc filing system &Egg when using the Plus 3 (In ADFS page would normally be &1D00). The DFS is simply loaded using the software supplied with the ABR from disc. (3.5" ADFS disc + manual)

### ADVANCED ELECTRON DFS

(05) /E/ £21.00 ex VAT £24.15 inc VAT

Electron & Plus 3 users. . . gain BBC compatibility by adding the Advanced Electron DFS (1770 DFS) this is the same disc filing system supplied with the BBC B+. Now you can produce and access (compatible) BBC disc based software. We can also supply 5.25" disc drives to add to your Plus 3 (inc. 2nd. drive adapter). \*ACP has produced another superb ROM for the Electron\*. . . Electron User Feb '86 (supplied on 16K EPROM + DFS MANUAL)

### ADVANCED 1770 DFS

3 versions ADM/C(11) - ADB(12) ADE(13)  
£30.00 ex VAT £34.50 inc VAT

ACP have totally re-written the Acorn 1770 DFS, enhancing existing features & adding new ones. The result is a very fast and powerful disc filing system with the ability to operate in double density occupying both sides of a disc (640K). Automatic file relocation, improved file handling, 62 file catalogue and Sways RAM can be used as a fast RAM DISC. (16K EPROM + comprehensive manual)

### ADVANCED DISC TOOLKIT

(01) /M/B/E/C £30 ex VAT £34.50 inc VAT

Any Acorn user including Master, BBC B+, Electron, DFS, 1770 DFS, ADFS, 2nd & co-processors A.C.P.'s BEST SELLING product containing over 30 commands inc.: - powerful memory & disc editor, search memory/disc/basic, catalogue/unplug ROMS, load/run programs below page, automatic menu, file transfer (inc. locked cassette files), ADFS utils etc, etc ("it's superb". . . Database Pubs. - "A top-class toolkit - I have no hesitation in recommending it. . . Acorn User Nov. 86) (16K EPROM & FULL MANUAL)

### ADVANCED DISC INVESTIGATOR

(06) /M/B/E/C £25 ex VAT £28.75 inc VAT

A very powerful Disc utility for standard & non-standard discs. Backup most protected discs, edit any type of non-standard disc, check & repair faulty tracks, create new disc formats, copy 40 track discs to 80 track discs, verify two non-standard discs. (\*ADI features an extremely comprehensive sector editor, and one of the finest I've seen\*. . . Tubelink on Prestel) (supplied on 16K EPROM + manual)

### DATABASE PUBLICATIONS

Now exclusively on 3.5" Disc

Electron User Jan.-Aug. 8 monthly disc	£4.75
Fun School under 5's	£5.95
Fun School 5-8's	£5.95
Fun School 8-12's	£5.95
Majic Sword	£6.95
10 Best Educational Vol. II	£6.95
Classic Arcade Games	£6.95
Arcade Games Creator	£5.95
Nursery Rhymes	£6.95
10 of Best Vol. 1	£6.95
10 of Best Vol. 2	£6.95
10 of Best Vol. 3	£6.95
10 of Best Vol. 4	£6.95
Classic Card & Board Games Vol. I	£7.95
Classic Card & Board Games Vol. II	£7.95
E.U. August 87 Disc containing Printer Driver	£4.75

5.25" Discs

Arcade Game Creator	£5.95
Knitwear Designer	£9.95

## PRES-ADVANCED FILE MANAGER

The ultimate 'front-end' for ADFS and DFS includes:

- Menu - infinitely expandable
- Delete - deletes any number of files
- Rename - rename multiple files using wildcards
- Copy - extremely comprehensive file copier



Screen picture shows AFM in Copy mode on Master Turbo

AFM follows the PRES 'Master Plan' of upwards compatibility - it runs on Electron, BBC B, B+, B+128, Master 128 and Compact, with Second/Co-processors and Acorn-compatible versions of DFS & ADFS. £25 ex VAT £28.75 inc VAT

### AFM has four distinct modes:

**MENU** - allows browsing through the files and directories on a disc. Files are started from a menu of up to 7 options chosen for a selected ROM. Loaders are provided for Basic, The Basic Editor, View, ViewSheet, ViewStore, ViewSpell, Edit, Word-wise (+) and InterWord. This list can be expanded infinitely using an Acorn-approved OSWORD call. . . full details and example in the manual.

**DELETE** - allows files to be marked and then deleted with one keystroke.

**RENAME** - allows one or more files to be marked and then renamed using a wildcard name, ie one which varies with each file renamed. Thus you could rename s1, s2 and s3 to be s1\_old, s2\_old, and s3\_old in one operation. . . and that's only the beginning! As well as using the whole of the original name you can also pick out individual characters to form part of the new name.

**COPY** - the strongest feature of AFM. It is a two stage copy routine. With both source and target directories shown on screen the files to be copied are marked. Once all the files have been marked copying is started and the computer can be left to get on with it!

Large files can be split across several disks, and recombined. As much as possible of the computer's memory is used for copying files, including unused parts of shadow screen memory, sideways ram banks (inc. AP7), ram cartridges (inc. ABR(32K) and AQR (256K)), tube memory (up to 61K), B+ paged ram (12K) and unused parts of the Slogger Master Ramboard (Electron).

Comprehensive error trapping and recovery is provided, so a copying run will rarely have to be aborted unfinished! And there's much, much more. . .



ONLY AVAILABLE THROUGH PRES  
LOW INTRODUCTORY  
PRICES ON DISCS

	5.25" DFS	3.5" ADFS
Life of Repton	✓	
Spellbinder	✓	
Bonecruncher	✓	
Elixir	✓	✓
Play It Again Sam	✓	✓
(Contains Citadel, Thrust, Strikers Run, Ravenskull)		
Palace of Majic	✓	✓
Superior Col. Vol. 3		✓
(Contains Synchron, Repton, Repton II, Karate Combat, Deathstar, Smash & Grab & Overdrive)		
Codename Droid		✓
Crazy Rider		✓



# PRES

## PRES POLICY

1. To provide the best possible service & assistance to users.
2. Supply Acorn based or Acorn compatible products & to enable upward compatibility wherever possible.
3. Provide tested products with special attention to quality of design, components & production.
4. \*\*Only to cash cheques & credit card receipts when we know we can supply the goods ordered.\*\*

### THE ADVANCED PLUS 3 MK II

The only fully compatible disc upgrade running Acorn's own filing system.

**COMPLETE PACKAGE ONLY**  
£129 excl VAT; £148.35 inc VAT

### ADVANCED PLUS 5

A unique interface for those wanting the maximum expansion from just one slot in the PLUS 1.  
£58.00 Ex VAT; £68.24 inc VAT

**ADVANCED PLUS 1** . . . The plus 1 is the main expansion for the Electron.

£50.00 excl VAT; £57.50 inc VAT

**ADVANCED PLUS 6** . . . a fully buffered 6 ROM expansion module for the Electron user.

£33.00 excl VAT; £37.95 inc VAT

**UPGRADE SERVICE** for the original Acorn Plus 1 to Advanced Plus 1 and AP6.

£40.00 excl VAT; £46.00 inc VAT

### ADVANCED ROM ADAPTER 2

An Acorn approved cartridge containing a card with special 'zero' profile sockets.

£13.00 excl VAT; £14.95 inc VAT

### ADVANCED BATTERY-BACKED RAM

A standard Acorn approved cartridge but containing 32k (2 x 16k) of sideways RAM, inc. Software Protect Facility.

£39.00 excl VAT; £44.85 incl VAT

### DISC INTERFACES

(Plus One required)

**AP3 INTERFACE:** As supplied with AP3 package.  
Price £52.00 ex VAT £59.80 inc VAT

**AP4 INTERFACE:** A fully Acorn compatible disc interface.  
Price £60.83 ex VAT £69.95 inc VAT

**AP34 INTERFACE:** Get the best of both filing systems.  
Price £69.55 ex VAT £79.98 inc VAT

### ADVANCED PLUS 2 ROM

We feel this is one of the best, low cost, additions we have produced for the Electron & +1 user, especially for Plus 3, AP3 & ABR users.

£11.00 ex VAT; £12.65 inc VAT

### ADVANCED PLUS 7

An internal battery-backed RAM upgrade for the Advanced Plus 6.

£39.50 ex VAT; £45.42 inc VAT

### \*\* USER PORT \*\*

A low cost unit for those who just require a user port interface.

£19.99 ex VAT; £22.95 inc VAT

### ELECTRON ADVANCED USER GUIDE

further reading and information for the Electron user. . . . . £3.95

### ADFS VERSION 1.1

Suitable for existing Plus 3 or A.P.4 users.

£14.95 ex VAT; £17.19 inc VAT

### ADFS E00

For Electron users with either Plus 3 or A.P.4 and 32k of S/W RAM i.e. ABR.

£14.95 ex VAT; £17.19 inc VAT

5.25" ADFS (manual avail. sep.) £14.00 ex VAT; £16.10 inc VAT

5.25" DFS (2 discs+ADFS manual) £19.00 ex VAT; £21.85 inc VAT

### AP4 MOD

This converts an AP3 to an AP34 (ie. DFSE00) supplied as a two chip set, full documentation and fitting instructions.

£21.74 ex VAT. £25.00 inc. VAT

### ADVANCED GAMES COMPENDIUMS-ON DISC

Vol. I		
Invaders	Stock Car	Croaker
Jet Power Jack	Bandits @ 3	Felix in the
Killer Gorilla	Bumble Bee	Factory
Vol. II		
Felix and the Fruit	Rubble Trouble	Moonraider
Monsters	Swag	Frenzy
The Mine	Cybertron Mission	Escape Moonbase Alpha
Vol. III		
Danger UXB	Adventure	Chess
Ghouls	Positron	Galactic
Felix and the Evil Weevils	Swoop	Command
3.5" £9.99 ex VAT each volume; £11.49 inc VAT		
5.25" £8.99 ex VAT each volume; £10.34 inc VAT		

### A.D.F.S Guide Manual

£5.00

**ELECTRON VERSION OF A.L.P.S.**  
(Adventure Language Programming System)  
£25.17 ex VAT £28.95 inc VAT

### DISC DRIVES

**NEW LOW PRICES**	Ex VAT	+VAT
Cumana 5.25" dbl/sided 40/80 track, switchable, inc. psu. . . . .	£113.00	£129.95
Cumana 5.25" single/sided 40 track, inc. psu. . . . .	£112.17	£129.00
Cumana 3.5" double/sided 80 track, inc. psu. . . . .	£112.17	£129.00
PRES Special 3.5" double sided 80 track, inc. psu. . . . .	£78.00	£89.70

### DISCS

3.5" 10 in plastic library box - ideal for Plus 3 users . . . . .	£19.95
5.25" 10 dble/sided dble/dens. . . . .	£12.99
5.25" 10 sing/sided sing/dens. . . . .	£8.99
5.25" Twin Gift Pack . . . . .	£1.49

### VIEW CARTRIDGE

the Acornsoft word processor for the Electron and Plus 1. Inc. full documentation. . . . . £14.95

### VIEWSHEET CARTRIDGE

the Acornsoft spreadsheet for the Electron and Plus 1. Inc. full documentation. . . . . £14.95

### VIEW & VIEWSHEET

both products as above  
"special price". . . . . £22.00

## SPECIAL PACKAGE PRICES

	Ex VAT	Inc VAT
AP1 + AP3 . . . . .	£165.00	£189.75
AP1 + AP6 . . . . .	£77.00	£88.55
ABR + 3.5" . . . . .		
ADFS E00 . . . . .	£48.65	£55.95
ABR + 5.25" . . . . .		
ADFS E00 . . . . .	£46.95	£53.99
ABR + 5.25" . . . . .		
DFS (ADFS E00) . . . . .	£51.00	£58.65
AP5 + Music 5000 . . . . .	£152.17	£175.00
AP7 + 3.5" . . . . .		
ADFS E00 . . . . .	£49.52	£56.95
AP7 + 5.25" . . . . .		
ADFS E00 . . . . .	£48.65	£55.95
AP7 + 5.25" DFS (ADFS E00) . . . . .	£52.13	£59.95
AP4 + CS400 . . . . .	£147.78	£169.95
AP1 + AP4 + CS400 . . . . .	£189.00	£217.35

## ACCESSORIES

**ELECTRON POWER SWITCH**  
£3.96 ex VAT; £4.55 inc VAT

**AP3 2nd DRIVE LEAD**  
£5.96 ex VAT; £6.85 inc VAT

**PLUS 3 2nd DRIVE ADAPTOR**  
£6.91 ex VAT; £7.95 inc VAT

**Panasonic KX-P1081 Printer Ribbon**  
£5.50 ex VAT; £6.32 inc VAT

**ADVENTURE GAMES ON DISC**  
3.25" ADFS £6.95 ex VAT per Disc; £7.99 inc VAT per Disc

## COLOUR MONITOR

**Phillips Med. Res.**  
£213 ex VAT; £244.95 inc VAT

## PRINTER

**Panasonic Matrix with NLQ**  
£155.65 ex VAT £179.00 inc VAT

## NEW PRODUCT

**ADVANCED BASIC EDITOR+ PLEASE CALL FOR DETAILS**

## MUSIC 5000

£99.00 (EX. VAT)  
£113.85 (INC. VAT)

## NEW PRODUCT

**A new 1Mhz Bus low cost cartridge coming soon**

Please send order to:-

**P.R.E.S. LTD., PO. Box 319, LightWater, Surrey, GU18 5PW. Tel: 0276 72046 (24 hr). Fax: 0276 51427**

(Mail order only)  
All our prices include  
UK delivery & VAT  
Subject to availability



(in event of any query-  
please include your tel. no.)

Name . . . . .  
Address . . . . .  
Postcode . . . . .  
Tel: . . . . .  
Credit Card No.: . . . . .  
Product Qty @ Total  
I enclose payment for £ . . . . .  
Exp date . . . . . (Ref E9)



## New Educational Bundle

For a limited period we are offering ALL THREE Fun School 1 AND Nursery Rhymes in a special educational bundle.

# FUN SCHOOL!

### Ages 2-5

Alphabet  
Colours  
Counting  
House  
Magic Garden  
Matchmaker  
Numbers  
Pelican  
Seaside  
Snap



**PELICAN**  
Teach your children to cross the road safely at a Pelican crossing

### Ages 5-8

Balance  
Castle  
Derrick  
Fred's Words  
Hilo  
Maths Test  
Mouser  
Number Signs  
Seawall  
Super Spell



**NUMBER SIGNS**  
Provide the correct arithmetic sign and aim to score ten out of ten

### Ages 8-12

Anagram  
Codebreaker  
Dog Duck Corn  
Guessing  
Hangman  
Maths Hike  
Nim  
Odd Man Out  
Pelmanism  
Towers of Hanoi



**HANGMAN**  
Improve your child's spelling with this fun version of the popular game

- Use your BBC Micro to teach and amuse your children at the same time.
- Three packages crammed full of educational programs – and so easy to use!
- Each program has been educationally approved after extensive testing in the classroom.

RRP £20.80  
**OUR PRICE**  
£9.95

## NURSERY RHYMES

# 5

fun-packed educational programs . . . for young children everywhere

This delightful collection of programs is based around children's favourite Nursery Rhymes. There's plenty of sparkling colour, sound and captivating animation to keep them riveted – and as they play they'll be learning all the way.

- ★ Tell the time with Hickory Dickory Dock.
- ★ Assemble the jigsaw in Humpty Dumpty.
- ★ Learn to spell with Jack and Jill.
- ★ Match the animals in See Saw Marjory Daw.
- ★ Play an exciting game in Hey Diddle Diddle.



Send for your collection today using the form on Page 45



**Francis Botto reveals how the Electron came to be produced and reports on its success**

# From little Acorns...

**D**URING the last six years Acorn has had its up and downs, and one of those downs, surprisingly, was the Electron, which was a great disappointment in the wake of the BBC Micro phenomena.

In late 1983 everything looked rosy for the Electron, there was real optimism among Acorn staff at that time as all their successes seemed set to elevate Acorn Computers to the pinnacle of the British computer industry.

The initial demand for the Electron meant that Acorn could double production of its machine. The first 100,000 built in Malaysia were complemented by a further 100,000 assembled at AB Electronics in Rogerstone, Gwent. AB Electronics was already assembling BBC Micro motherboards at this time, so it was the ideal choice for the contract.

With a turnover of £42 million in 1983, Acorn was in the top five UK computer companies. However, the question which loomed in the background was: Is the Electron a real alternative to the BBC Micro and will the public take to it with equal enthusiasm?

After all, Acorn's strategy of launching an inexpensive cut-down version of the BBC Micro – which was what the Electron was intended to be – was a risk. For example, was the public interested in paying £199 for a 32k machine just because it had a BBC Basic interpreter?

At this time the 16k BBC model A (at £299) was about to be discontinued, so most dealers were selling 32k model Bs at a hefty £399. The Electron at £199, therefore, looked like an attractive alternative.

The first real setback came when the Electron failed to reach the shops on time, which must have led numerous would-be customers to look elsewhere.

Registered Acorn dealers were telling an inexhaustible supply of customers that all they need do was place a small deposit and they would have their machine shortly. Many patient customers placed confidence in their dealers and Acorn and ordered

machines for the Christmas of 1983. But how many didn't?

The Electron's late arrival aroused suspicions of technical problems with the design, which Acorn flatly denied. However, it was later revealed that there was, in fact, a nasty keyboard snag which led to a recall situation – the first hiccup in the Electron story.

There were no real PR disasters with the

Electron, such as a bad review, as almost everyone assumed that it would be a great success. The worst thing that reviewers said about it was that it was a stripped down BBC Micro in which all the good bits had been sacrificed for the sake of a lower price.

To cut a long story short, a small price war ensued and the Electron was reduced to £129 and that marked the beginning of the end for the machine.

I suppose the real problem with the Electron is that it is always in the shadow of the BBC Micro, undeniably a hard act to follow. But although the Electron has had rather a bumpy ride it has stood the test of time. It continues to be successful with thriving third party hardware suppliers like Pres providing a never-ending list of add-ons and software.

There's life in the old dog yet, and it should keep many enthusiasts computing well into the next decade.



## Before the Electron

*If you wanted to buy a British personal computer in 1981, you would have had two choices – a ZX80 or an Acorn Atom. Today the Atom is more likely to grace cupboards and attics than desktops, but it remains a notable milestone in the general evolution of Acorn Computers.*

*The Atom was the first affordable British personal computer to have a proper keyboard, and in terms of physical appearance it was not unlike the console of the BBC Master Compact of today.*

*In kit form it cost £138, built and tested it was £172.50. The Atom was generally used*

*by electronics hobbyists – it seemed that electronics people knew exactly what to do with them, unlike the general public who were at a slight loss.*

*The Atom, like the Electron to come later, had a 6502 processor, 2k of ram and 8k of rom. It could be enhanced in terms of graphics, input/output boards and so on. In fact, Acorn advertised it as "Unique in concept – a home computer that grows as you do... No need to worry that your investment will be overtaken by new technology. As you need more power, more facilities, you can add them".*



# Another great electron subscription offer

A subscription to *Electron User* is already excellent value for money. Through your letterbox each month you get a program and feature packed magazine, plus a tape containing all the programs from that issue – with the occasional extra.

And now you get even more for your money because we're giving away a FREE copy of *Barbarian* with every subscription.

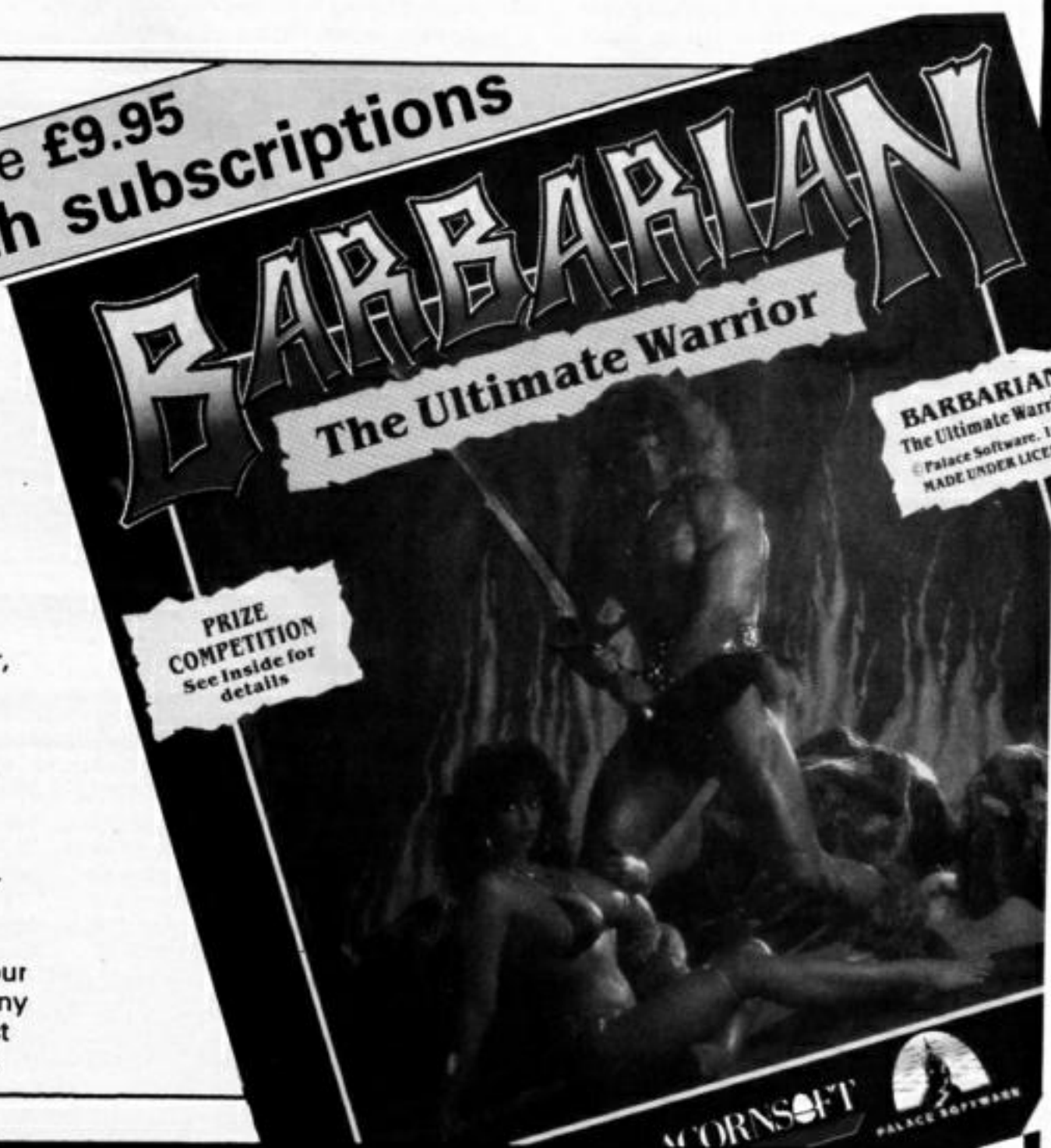
So what are you waiting for? Fill out the order form opposite, send it to us and as soon as the order's processed we'll despatch your copy of *Barbarian*, and you'll start receiving *Electron User* from the next available issue – reaching you well before it's in the shops.

Normal price £9.95  
**FREE with subscriptions**

*Barbarian* is a fierce game of combat which will tax your skill and reflexes to the limit.

When you start you can choose either a male or female character, then you have to hack and slay your way through dozens of punishing screens on your way to the Dungeon of Drax.

When you get there your mission is to kill the evil Drax himself – but be careful, you'll need all your wits about you to have any chance of success against your dastardly opponent.



**Send for your subscription using the form opposite**



# ORDER FORM

All prices include postage, packing and VAT  
Overseas orders sent exclusively by Air Mail

Valid to September 30, 1989  
Please enter number required in box

All software on this form is available only on tape.

Some of the products mentioned are also available on disc from  
P.R.E.S. through their advertisement in this issue.

## Annual subscription (see opposite page)

Includes monthly tape and Barbarian  
(UK only)

£p

	NEW	RENEWAL
UK £19 3008	<input type="checkbox"/>	3009 <input type="checkbox"/>
Europe (incl. Eire) £23 3003	<input type="checkbox"/>	3476 <input type="checkbox"/>
Overseas £38 3004	<input type="checkbox"/>	3477 <input type="checkbox"/>

Orders received by September 13  
will commence with October issue

## Back Issues

(see page 26)

March 1989 to August 1989 bundle £7.99 3157 ☐

Add £3 Europe & Eire / £12 Overseas

March 1989	£1.50	3236	<input type="checkbox"/>
April 1989	£1.50	3237	<input type="checkbox"/>
May 1989	£1.50	3238	<input type="checkbox"/>
June 1989	£1.50	3239	<input type="checkbox"/>
July 1989	£1.50	3240	<input type="checkbox"/>
August 1989	£1.50	3241	<input type="checkbox"/>

Add 50p per issue Europe & Eire / £2 Overseas

## Fun School 2

Under 6 years	£9.95	3087	<input type="checkbox"/>
6 to 8 years	£9.95	3088	<input type="checkbox"/>
Over 8 years	£9.95	3089	<input type="checkbox"/>

Add £2 per program for Europe & Eire/£5 for Overseas

## Zenon

£4.95 3143 ☐

Add £2 per program for Europe & Eire/£5 for Overseas

## Clogger

£4.95 3144 ☐

Add £2 per program for Europe & Eire/£5 for Overseas

## Orbital

£4.95 3145 ☐

Add £2 per program for Europe & Eire/£5 for Overseas

## DTP Yearbook

(see page 12)

£9.95 0505 ☐

Add £2 for Europe & Eire/£5 Overseas

## Arcade Game Creator

Includes full documentation

(see page 34)

£9.95 3096 ☐

Add £1 for Europe/Overseas

## Cheat It again Joe

£p

Volume 1	£2.99	3094	<input type="checkbox"/>
Volume 2	£2.99	3095	<input type="checkbox"/>
Volume 3	£2.99	3142	<input type="checkbox"/>

Add £2 per program for Europe & Eire/£5 for Overseas

## Educational Bundle

ALL THREE Fun School 1 PLUS Nursery Rhymes

(see page 42)

£9.95 3084 ☐

Add £3 for Europe & Eire / £7 Overseas

## Simply Superior

NEW

(see page 15)

Repton Infinity	£9.95	3153	<input type="checkbox"/>
Elite	£9.95	3154	<input type="checkbox"/>
The Last Ninja	£7.95	3155	<input type="checkbox"/>
Barbarian	£7.95	3156	<input type="checkbox"/>

Add £2 per program Europe & Eire/£5 Overseas

## 10 of the Best Education programs

(see page 39)

£5.95 3063 ☐

Add £1 for Europe/Overseas

## Magazine binder

£3.95 3059 ☐

Add £3 for Europe & Eire/£7 for Overseas

## Books

(see page 18)

All three books £7.95 3061 ☐

Add £3 for Europe/Overseas

## Transparent Calculator

(see page 30)



Tick here if you are ordering the calculator £7.95 3020 ☐

Tick here if you are spending £25 or more  
on reader offers (excluding subscriptions)  
and wish to claim your FREE calculator

3021 ☐

Add £1 Europe & Eire/£2 for Overseas

Readers in Europe (inc Eire) add £2. Overseas add £5 per  
item unless otherwise indicated

TOTAL

1000 1000 1000 1000 1000 1000 1000 1000

Send to:

Database Direct, FREEPOST,  
Ellesmere Port, South Wirral L65 3EB

(No stamp needed if posted in UK) Please allow 28 days for delivery

Order at any time of the day or night

Telephone: 051-357 2961

Orders by Fax:  
051-357 2813

Orders by Prestel:  
Key \*89, then 614568383

Orders by MicroLink:  
MAG001

Don't forget to give your name, address and credit card number

Payment: please indicate method (✓)

☐ Access/Mastercard/Eurocard/Barclaycard/Visa

Expiry  
Date

No.

☐ Cheque/Eurocheque made payable to Database Publications Ltd.

Name  Signed

Address

Post Code

Tel  EU9



# ◀ From Page 17

```

700 ENDPROC
710 :
720 DEF PROCedit
730 VDU28,1,13,39,7
740 *FX15,1
750 *FX13,6
760 ONERRORGOTO190
770 PRINTTAB(0,6)
780 PRINT "Which rule number "
790 INPUTCX
800 PRINTTAB(0,6);CX;" If ";:1
INPUT$(1,CX)
810 REPEAT:UNTIL NOT INKEY(-74)
820 PRINT;" THEN ";:INPUT$(2
,CX)
830 IFAZ=CAZ=AZ+1
840 ENDPROC
850 :
860 DEF PROCinference_engine
870 VDU28,1,13,39,7
880 *FX15,1
890 *FX13,6
900 PRINT TAB(0,6)
910 PRINT "Input problem"
920 INPUT$:PRINT"LEADS";:FOR$Z
=1TO299
930 IFA$=A$(1,$X)PRINT;" ";A$(2
,$X);
940 NEXT
950 REM Backward chain starts h
ere
960 PRINT
970 PRINT "Input LEAD you wish
to investigate"
980 INPUT$
990 FOR$Z=1TO299

```

```

1000 IFA$=A$(1,$X)PRINT;" ";A$(2
,$X);:A$=A$(2,$X):GOTO990
1010 NEXT
1020 ENDPROC
1030 :
1040 REM Procedure loads knowled
ge base
1050 DEF PROCload
1060 REM flush keyboard
1070 *FX 15,1
1080 REM enable escape
1090 *FX13,6
1100 VDU26,81F,0,14:PRINT" "
1110 VDU28,1,24,39,7,12
1120 ONERRORIFERR=176GOTO110
1130 PRINT"(Cursor keys + cop
y enabled)"
1140 REM IMPORTANT!! Omit the
following line if using tape
1150 *CAT
1160 PRINT"Knowledge base title
";
1170 INPUTfile$:YX=0:PRINTfile$
1180 V=OPENIN file$
1190 REM IMPORTANT!! Omit the
following line if using tape
1200 IFPTR#V+EXT#V=0PRINT"Not o
n this disk":GOTO1170
1210 REPEAT:YX=YX+1:FOR$X=1TO2
1220 INPUT#V,A$(gX,YX):NEXT
1230 UNTIL EOF #V
1240 CLOSE #V
1250 PRINTYX;" rules"
1260 AX=YX
1270 GOTO110
1280 :
1290 REM Procedure saves entire
knowledge base

```

```

1300 DEF PROCsave
1310 REM Flush keyboard buffer
1320 *FX15,1
1330 REM Enable escape key
1340 *FX13,6
1350 VDU12,81F,0,13:PRINT;"Knowl
edge base title"
1360 ONERRORGOTO110
1370 INPUTfile$:PRINTAX-1;" rule
s"
1380 V=OPENOUT file$
1390 FOR$X=1TOAX:FOR$Y=1TO2
1400 PRINT#V,A$(gX,sX)
1410 NEXT:NEXT
1420 CLOSE #V
1430 ENDPROC
1440 :
1450 DEF PROCwindow_computations
1460 IFBZ=300BZ=0:ENDPROC
1470 COLOUR129:COLOUR0
1480 VDU28,1,24,38,15
1490 PRINTTAB(0,9);BZ;TAB(4,9);"
IF ";A$(1,BZ);" THEN ";A$(2,BZ)
1500 ENDPROC
1510 :
1520 DEF PROCsquare
1530 VDU81F,0,6:PRINTTAB(XZ-1,6)
" ":REM 4 spaces
1540 VDU81F,XZ-1,6:PRINTCHR$(131
);"A"
1550 ENDPROC
1560 :
1570 DEF PROCsound
1580 FOR$X=100TO150STEP50
1590 SOUND1,-4,$X,2
1600 NEXT
1610 FOR $Z=1 TO 1000:NEXT
1620 ENDPROC

```

## ELECTRON SPARES

Acorn Data Recorders .....	£24.99
Electron Mains Power Unit .....	£9.95
Plus 1 Dual Rom Holders .....	£9.95
Cassette Leads (7 Din - 3 Jacks) ..	£3.99
Printer Leads (Parallel) .....	£4.99
Complete Keyboard Assembly (inc keytops) .....	£12.99
Keyboard Key Switches (Pack of 5) .....	£1.99
Keytops (complete set) .....	£4.99
Cases (Top & Bottom Complete) ..	£7.50

### GRACAR

Unit 6 Acacia Close  
Leighton Buzzard  
Tel: 0525 383074

## ADVERTISERS INDEX

Computer Shopper Show .....	4
Database Educational Software ..	42
Graycar .....	46
Impact Posters .....	33, 47
Jafa Systems .....	14
PRES .....	40, 41
Superior Software .....	2, 48
Swift Software .....	26



# ARCADE SOCCER



1 to 24  
PLAYERS  
KEYBOARD OR  
JOYSTICKS

## TOTAL ACTION.... TOTAL CONTROL

Arcade Soccer really is football action at its very best. Using an overhead view to make gameplay as exciting as possible it features everything that you could want in a football game. Corners sliding tackles, throw-ins, goal kicks, dribbling, shooting, passing and much more. But not only does Arcade Soccer give you Total Action it also puts you in Total Control.

Firstly you can play with either keyboard or joysticks, against the computer and/or with up to 23 friends. The options are almost limitless; you can choose the skill of the goalkeepers, the speed and length of the game, play "friendlies" or tournaments and even enter the most coveted of championships - the World Cup.

*Arcade Soccer lets you control the action - "It's brilliant."*



### HOW TO GET ARCADE SOCCER

Arcade Soccer is available now from most good games outlets. If there isn't a stocklist near you then we offer an instant mail order service. Simply send us a quick letter telling us the version you require, your name and address, and payment via cheque, postal order or Access/Visa details. Your copies of Arcade Soccer will be sent by First Class Post on the SAME day we receive your letter. We pay the postage and packing (overseas add £3).

Telephone orders with Access/Visa are also welcome.  
24 Hour Answering Service, 7 days a week.

### ARCADE SOCCER PRICES

BBC B/Master Cassette	£9.95
Acorn Electron Cassette	£9.95
BBC B/Master 5 1/4" Disc	£12.95
Master Compact 3 1/2" Disc	£13.95
Archimedes 3 1/2" Disc	£19.95

The above screenshots are taken from the BBC and Electron versions. The enhanced Archimedes version will be available mid October.



*The Fourth Dimension*



The Fourth Dimension, P.O. Box 4444, Sheffield. Tel: (0742) 700661





# SUPERIOR SIX



BBC Micro  
Cassette  
**\$9.95**

## Barbarian II

The Barbarian and Marlene fight the Monsters in the Dungeon of Drax - 80 action-packed screens on four levels with 20 fearsome monsters to defeat.  
"A most impressive and playable game" - Acorn User



BBC Micro Cassette  
**\$12.95**

## Repton Infinity

The Ultimate Repton - Four Games and a Game Creator.  
"Repton Infinity would be excellent value for the games alone, but you can have much more fun by experimenting with the game creator" - Micro User



BBC Micro  
Cassette  
**\$9.95**

## Predator

Nothing like it has ever been seen before! You've heard about the Schwarzenegger film PREDATOR... now you can play the leading role. Fight your way through the South American jungle... but beware the mysterious alien who keeps taking out your men.

## PLAY IT AGAIN SAM 8



BBC Micro  
Cassette  
**\$9.95**

## Play It Again Sam 8

Top Hit Four-Game Compilation - One of the greatest sporting simulations ever, combined with three of Superior's best-loved games. WINTER OLYMPIAD 88, QUEST, AROUND THE WORLD IN 40 SCREENS, MR. WITZ

## PLAY IT AGAIN SAM 9



BBC Micro  
Cassette  
**\$9.95**

## Play It Again Sam 9

A Four-Game Compilation that will Test Your Arcade Skills to Their Limits - Featuring a brand new release and three recent smash hits. CAMELOT, STEVE DAVIS SNOOKER, SPYCAT, THE LIFE OF REPTON

## PLAY IT AGAIN SAM 10



BBC Micro  
Cassette  
**\$9.95**

## Play It Again Sam 10

A Superb New Four-Game Compilation - Features an award-winning classic game, a top-quality brand-new release and two recent smash hits. Great value for money. ZAXXON, QWAK, 3D DOTTY, REPTON THRU TIME

## SUPERIOR SOCCER

NEWS  
FLASH

Superior Software now proudly presents SUPERIOR SOCCER, the best soccer game ever for the BBC Micro and Acorn Electron computers. SUPERIOR SOCCER is a superb game, which combines the best graphical features of arcade soccer games with the best strategic features of football manager games.

BBC Micro Cassette.....\$9.95  
BBC Micro 5 1/4" Disc.....\$11.95

Acorn Electron Cassette.....\$9.95  
BBC Master Compact 3 1/4" Disc.....\$14.95

Send in your order now and be the first with the greatest! Get the best, accept no substitutes!



24 HOUR TELEPHONE  
ANSWERING SERVICE FOR  
ORDERS

Please make  
all cheques  
payable to  
"Superior  
Software Ltd".



**SUPERIOR  
SOFTWARE**  
Limited

(Acornsoft is a registered trademark of Acorn Computers Ltd. Superior Software Ltd is a registered user.)  
Dept SSX2, Regent House, Skinner Lane, Leeds LS7 1AX. Telephone: (0532) 459453

**ACORNSOFT**

## OUR GUARANTEE

- All mail orders are despatched within 24 hours by first-class post.
  - Postage and packing is free.
  - Faulty cassettes and discs will be replaced immediately.
- (This does not affect your statutory rights)